

# JVC

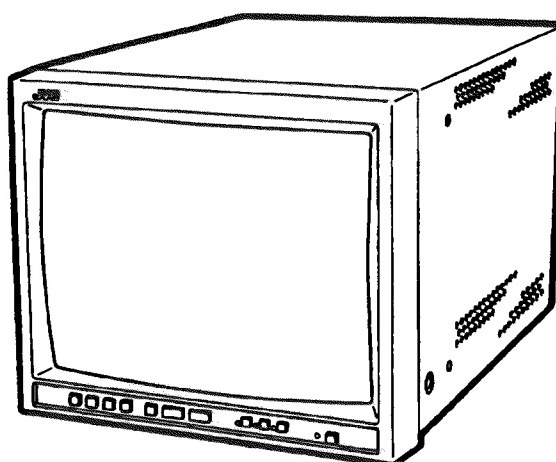
## SERVICE MANUAL

COLOUR VIDEO MONITOR

BASIC CHASSIS

A17

### TM-1700PN-S



## CONTENTS

■ SPECIFICATIONS .....	2
■ SAFETY PRECAUTIONS .....	3
■ FUNCTIONS .....	4
■ SPECIFIC SERVICE INSTRUCTIONS .....	6
■ SERVICE ADJUSTMENTS .....	10
★ STANDARD CIRCUIT DIAGRAM .....	2-1
■ PARTS LIST .....	31

# SPECIFICATIONS

Item	Content
<b>Colour system</b> <b>Picture tube</b> <b>Effective screen size</b> <b>Scanning frequency</b>  <b>Horizontal resolution</b> <b>Colour Temperature</b>	PAL / NTSC 3.58 44cm measured diagonally, flat square type, 90° deflection, in-line gun, vertical line trio type (phosphor stripe pitch of 0.42 mm) 330mm × 250mm (W × H) / 410mm (Diagonal) (H) 15.734 kHz (NTSC) 15.625 kHz (PAL) (V) 59.94 Hz (NTSC) 50Hz (PAL) 550TV line or more (Y/C input mode) 6500K; x=0.313, y=0.329 9300K; x=0.283, y=0.297
<b>High Voltage</b>	23.8kV ~ 26.2kV
<b>Signal input / output</b> <b>Composite video signal</b>  <b>Y/C Separate (1line)</b>  <b>Audio</b>	INPUT A,B(2lines) : BNC × 2each (with 1 bridge-connected output) With automatic termination 1Vp-p 75Ω negative sync Mini-DIN × 2each (4pin) (with 1 bridge-connected output) with automatic termination Y: 1.0Vp-p 75Ω C: 0.286Vp-p 75Ω (NTSC) 0.3Vp-p 75Ω (PAL) AUDIO A, B : RCA × 2each Monaural 0.5Vrms, high-impedance (with 1 bridge-connection output)
<b>Audio power output</b> <b>Speaker</b> <b>Remote control input</b>	1W (Monaural) 8cm round × 1 8Ω RCA × 2 (with 1 bridge-connected output) BPS & 16:9 control
<b>Power requirements</b> <b>Power consumption</b> <b>Operation temperature</b> <b>Operation humidity</b>	230V AC, 50/60 Hz 0.6A maximum 0 ~ 40°C 20 ~ 80% (non-condensing)
<b>Dimension</b> <b>Mass</b>	395mm × 334mm × 420.5mm (W × H × D) 17.2kg

*Design & specification are subject to change without notice.*

# SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by ( $\Delta$ ) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**  
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : ( $\perp$ ) side GND, the ISOLATED(NEUTRAL) : ( $\text{⌋}$ ) side GND and EARTH : ( $\oplus$ ) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.  
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10k $\Omega$  2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

## 9. Isolation Check

### (Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

### (1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(... Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

### (2) Leakage Current Check

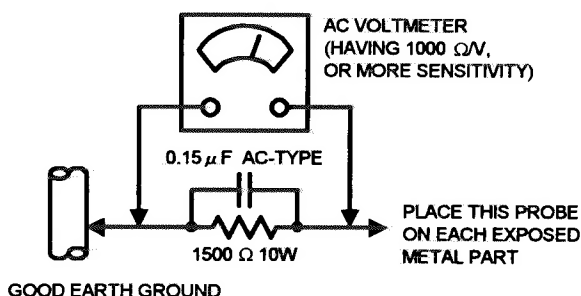
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

#### ● Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500 $\Omega$  10W resistor paralleled by a 0.15 $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

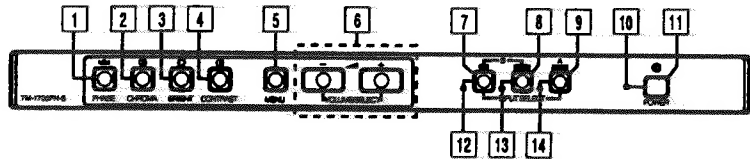
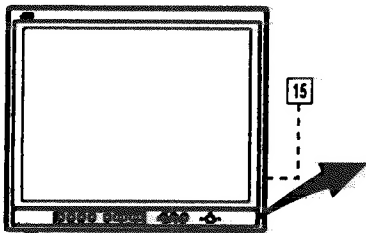
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



# FUNCTIONS

## FRONT VIEW

<Front Panel>



### 1 Phase button [PHASE

Press this button to set the picture hue adjustment mode. Adjust the value with the VOLUME/SELECT buttons. Also used as a control button in the menu function mode.

### 2 Chroma button [CHROMA

Press this button to set the picture colour density adjustment mode. Adjust the value with the VOLUME/SELECT buttons. Also used as a control button in the menu function mode.

### 3 Brightness button [BRIGHT

Press this button to adjust picture brightness. Adjust the value with the VOLUME/SELECT buttons. Also used as a control button in the menu function mode.

### 4 Contrast button [CONTRAST

Press this button to adjust picture contrast. Adjust the value with the VOLUME/SELECT buttons. Also used as a control button in the menu function mode.


### 5 Menu button [MENU]

Displays and disappears the <MENU> screen. Pressing the PHASE button with the Menu button depressed will display the <SET-UP MENU> screen.


### 6 Volume/Select buttons [VOLUME/SELECT - +]

Adjusts the speaker volume. Also used as a control button in the menu function mode.


### 7 Input B (Y/C) button [INPUT SELECT B

Selects the video signal input to the VIDEO B (Y/C) terminal (mini DIN 4 pin connector) and the audio signal input to the AUDIO B terminal (RCA connector) on the rear panel. When selected, the input B (Y/C) indicator  lights.

### 8 Input B (VIDEO) button [INPUT SELECT B VIDEO]

Selects the video signal input to the VIDEO B terminal (BNC connector) and the audio signal input to the AUDIO B terminal (RCA connector) on the rear panel. When selected, the input B (VIDEO) indicator  lights.

### 9 Input A (VIDEO) button [INPUT SELECT A VIDEO]

Selects the video signal input to the VIDEO A terminal (BNC connector) and the audio signal input to the AUDIO A terminal (RCA connector) on the rear panel. When selected, the input A (VIDEO) indicator  lights.

### 10 Power indicator

Lights in green when the power is ON.

Lit : When the power is on.

Unlit : When the power is off.

### 11 Power switch [POWER

Press this switch to turn the power on or off.

ON : Power is turned on.

OFF : Power is turned off.

### 12 Input B (Y/C) indicator

Lights in green when the Input B (Y/C) is selected.

### 13 Input B (VIDEO) indicator

Lights in green when the Input B (VIDEO) is selected.

### 14 Input A (VIDEO) indicator

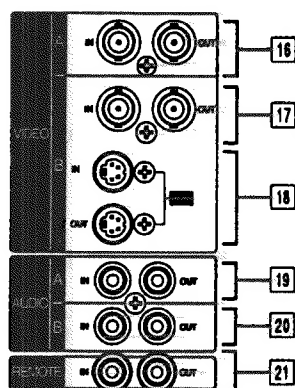
Lights in green when the Input A (VIDEO) is selected.

### 15 Speaker

A built-in speaker is located inside the right side panel when the monitor is viewed from the front.

## REAR VIEW

### <Rear Panel>



#### 16 Video A terminals [VIDEO A IN/OUT]

Video signal input (IN) and output (OUT) terminals.

The output terminal is bridge-connected.

IN : Video signal input terminal

OUT : Bridge-connected video signal output terminal

##### Notes:

\* For corresponding audio signals, use the AUDIO A terminals 19.

#### 17 Video B terminals [VIDEO B IN/OUT]

Video signal input (IN) and output (OUT) terminals.

The output terminal is bridge-connected.

IN : Video signal input terminal

OUT : Bridge-connected video signal output terminal

##### Notes:

\* For corresponding audio signals, use the AUDIO B terminals 20.

#### 18 Video B (Y/C) terminals [VIDEO B Y/C IN/OUT]

Y/C (S-Video) signal input (IN) and output (OUT) terminals.

The output terminal is bridge-connected.

IN : Y/C-separated (S-video) signal input terminal

OUT : Bridge-connected Y/C-separated (S-video) signal output terminal

##### Notes:

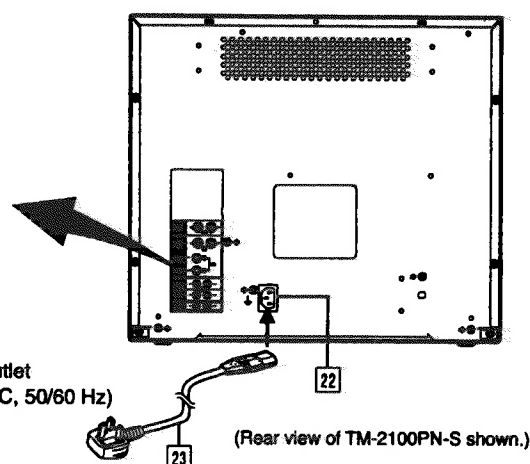
\* For corresponding audio signals, use the AUDIO B terminals 20.

#### 19 Audio A terminal [AUDIO A IN/OUT]

Input (IN) and output (OUT) terminals for the audio signal corresponding to the VIDEO A terminals 16. The output terminal is bridge-connected.

IN : Audio signal input terminal

OUT : Bridge-connected audio signal output terminal



##### Notes:

\* For corresponding video signals, use the VIDEO A terminal 16.

#### 20 Audio B terminals [AUDIO B IN/OUT]

Input (IN) and output (OUT) terminals for the audio signals corresponding to the VIDEO B terminals 17 or VIDEO B (Y/C) terminals 18. The output terminal is bridge-connected.

IN : Audio signal input terminal

OUT : Bridge-connected audio signal output terminal

##### Notes:

\* For corresponding video signals, use the VIDEO B terminals 17 or VIDEO B (Y/C) terminals 18.

#### 21 Remote terminals [REMOTE IN/OUT]

Input (IN) and output (OUT) terminals for external control.

The output terminal is bridge-connected. External control

is available either to select the ASPECT RATIO or to

select ON or OFF in BRIGHTNESS P.S. function mode.

Set the external control in the <SET-UP MENU> screen

mode.

External control functions	External control switch	
	Open circuit (open)	Short circuit (short)
ASPECT RATIO	4-3 (4:3)	16-9 (16:9)
BRIGHTNESS P.S.	OFF	ON

#### 22 AC Inlet [AC IN]

Power input connector. Connect the provided AC power cord 23 to an AC outlet (230 V AC, 50/60 Hz).

#### 23 Power cord

Connects the provided power cord (230 V AC, 50/60 Hz) to the AC IN connector.

# SPECIFIC SERVICE INSTRUCTIONS

## DISASSEMBLY PROCEDURE

### [CAUTION]

- \* Even with the power switch off, some parts of the set are live. Be sure to disconnect the power cord from the AC outlet before disassembly and reassembly.

### REMOVING THE TOP COVER

1. Take out 8 screws marked (A).
2. Slightly spread the bottom of the top cover. Shift the cover rearward and raise it upward to remove it.

### REMOVING THE REAR PANEL

- After remove the top cover.
- 1. Take out 3 screws marked (B) and 2 screws marked (C).
- 2. Shift the top portion of the rear panel slightly rearward and raise it upward to remove it.

### REMOVING THE TERMINAL BRACKET

- Remove the top cover and rear panel.
- 1. Take out 5 screws marked (D) and 1 screw marked (E).
- 2. Slightly shift the terminal bracket rearward and raise it upward to remove it.

### REMOVING THE FBT HOLDER

- Remove the top cover and rear panel.
- 1. Remove the 1 screw marked (F).
- 2. While lift up FBT HOLDER, then withdraw it toward you as shown in figure.

### REMOVING THE CHASSIS

- Remove the top cover, rear panel and FBT HOLDER.
- 1. Remove the 1 screw marked (G).
- 2. While pulling the chassis remove it.

### REMOVING THE SPEAKER HOLDER

- Remove the top cover.
- 1. Remove the 1 screw marked (H).
- 2. Lift the speaker holder, then remove it.

### REMOVING THE SPEAKER

- Remove the speaker holder.
- 1. Push the claws slightly, and shift the speaker to downward, and remove it away (Fig. 2).

### CHECKING THE PW BOARD

To check the back side of the PW board.

- (1) Pull out the chassis.
- (2) Erect the chassis vertically so that you can easily check the back side of the PW board.

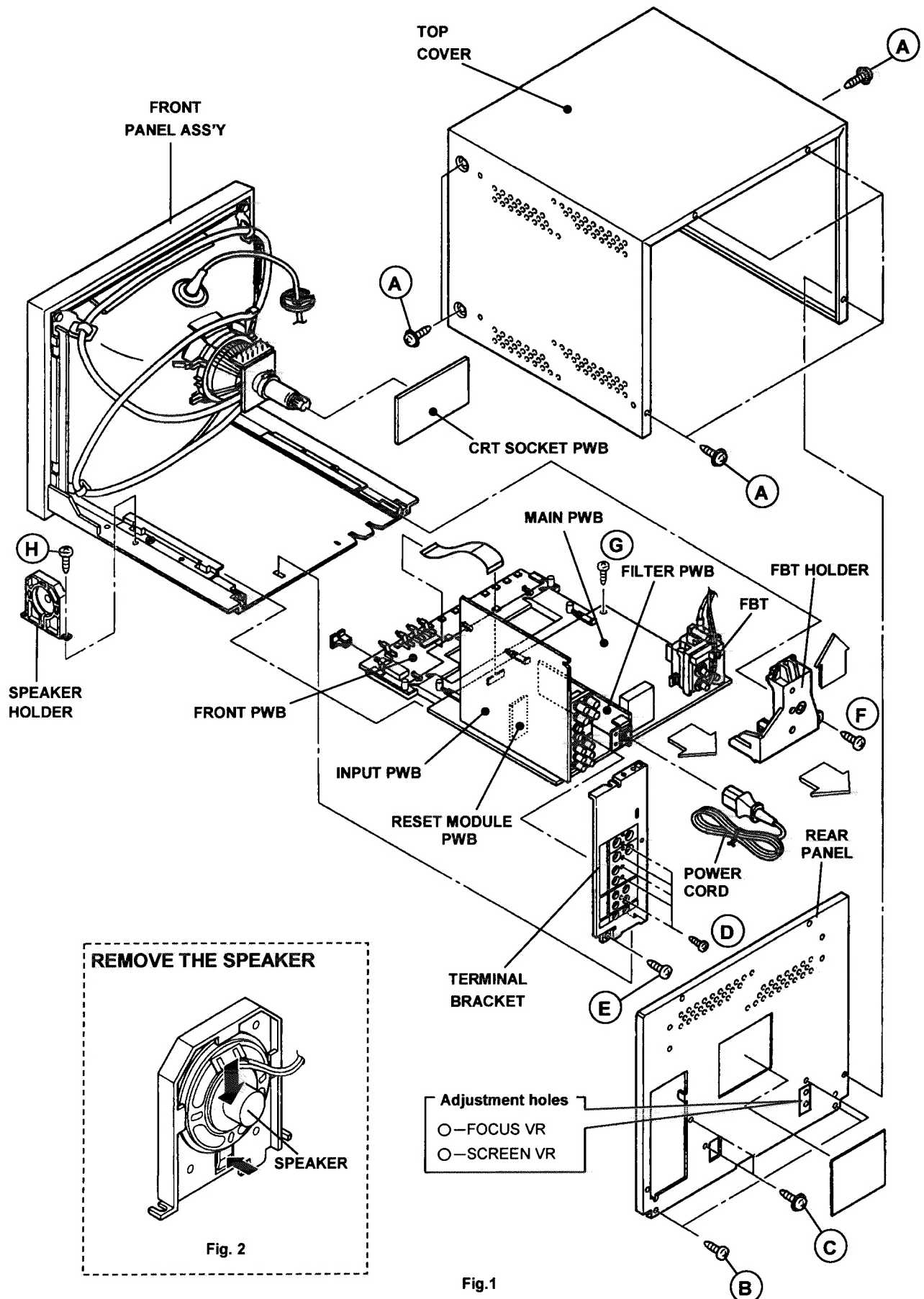
### [CAUTION]

- \* When erecting the chassis, be careful so that there will be no contacting with other PW board.

- \* Before turning on power, make sure that the CRT earth wire and other connectors are properly connected.

### WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires With a new cable tie.



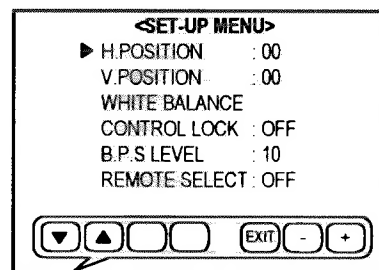
## MEMORY IC REPLACEMENT NOTES

This model uses non-volatile memory ICs. When these are replaced, the data must be reset.

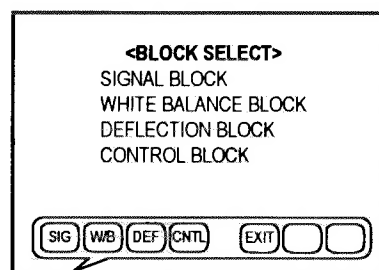
Video and deflection system data are stored in MEMORY IC. If this is replaced without entering the data, a normal picture will not be obtained. When replacing, be sure to use an IC containing the (initial value) data.

### ■ PROCEDURE FOR REPLACING MEMORY IC

1. Switch off the power and disconnect the power cord from the outlet.
2. Replace the MEMORY IC.  
Be sure to use an IC containing the (initial value) data.
3. Reconnect the power cord to the outlet and power on.
4. Check and set SET-UP MENU.
  - 1) Press MENU key and PHASE key simultaneously.
  - 2) The screen displays the SET-UP MENU.
  - 3) Check the values of SET-UP MENU refer to the table given below.
5. Refer to the initial setting values that table given below and enter the setting values.
6. Perform adjustments according to the adjustment items.
7. Confirm the INITIAL SETTINGS OF THE SERVICE MENU. For setting SERVICE MENU items, refer to the SERVICE ADJUSTMENTS.



SET-UP MENU



SERVICE MAIN MENU

### ■ INITIAL SETTING VALUES IN SERVICE ADJUSTMENTS

#### FRONT PANEL SETTING

SETTING ITEMS	VALUES
INPUT SELECT	Input A
CONTRAST	00
BRIGHT	00
CHROMA	00
PHASE	00
VOLUME	20

#### MENU SCREEN SETTING (USER SETTING)

SETTING ITEMS	VALUES
SHARPNESS	00
COLOR TEMP.	6500
COLOR SYSTEM	AUTO
ASPECT RATIO	4 - 3
BRIGHTNESS P.S	OFF

#### SET-UP MENU SCREEN SETTING

SETTING ITEMS			VALUES
H. POSITION			00
V. POSITION			00
WHITE BALANCE	6500	CUTOFF	ALL 00 (R.G.B)
		DRIVE	
	9300	CUTOFF	
		DRIVE	
CONTROL LOCK			OFF
B.P.S LEVEL			10
REMOTE SELECT			OFF



## SERVICE MENU SETTING ITEMS

BLOCK	ITEM	CONTENTS	
1.SIGNAL BLOCK	S01	MAIN	BRIGHT
	S02		CONTRAST
	S03	PAL	CHROMA
	S04	NTSC	CHROMA
	S05		PHASE
	S06	RGB CORRECT	BRIGHT
	S07		CONTRAST
	S08	UNDER SCAN	BRIGHT CORRECT
2.WHITE BALANCE BLOCK	W01	CUTOFF	R
	W02		G
	W03		B
	W04	D65 DRIVE	R
	W05		B
	W06	D93 DRIVE	R
	W07		B
	W08	RGB CUTOFF CORRECT	R
	W09		G
	W10		B
	W11	UNDER SCAN CUTOFF CORRECT	R
	W12		G
	W13		B
3.DEFLECTION BLOCK	D01	HORIZONTAL CENTER	
	D02	HORIZONTAL SIZE	
	D03	EW-PIN CUSHION	
	D04	EW-CORRECTION	
	D05	TRAPEZOIDAL	
	D06	VERTICAL SLOPE	
	D07	VERTICAL SIZE	
	D08	VERTICAL LINEARITY	
	D09	VERTICAL SHIFT	
4.CONTROL BLOCK	C01	SYSTEM	
	C02	BRIGHT POINT	UP
	C03		DOWN
	C04	CONTRAST POINT	UP
	C05		DOWN
	C06	CHROMA POINT	UP
	C07		DOWN
	C08	PHASE POINT	UP
	C09		DOWN
	C10	OSD H POSITION	
	C11	OSD VF 50Hz	
	C12	OSD VF 60Hz	
	C13	Y DELAY NTSC VIDEO	
	C14	Y DELAY PAL VIDEO	
	C15	Y DELAY NTSC S VIDEO	
	C16	Y DELAY PAL S VIDEO	
	C17	G DRIVE	
	C18	VERTICAL SHIFT RGB	
	C19	HORIZONTAL CENTER RGB	
	C20	BRIGHT SERVICE	
	C21	APERTURE CENTER	
	C22	VERTICAL GUARD	
	C23	HOUR METER	

# SERVICE ADJUSTMENTS

## BEFORE STARTING SERVICE ADJUSTMENT

1. Supply power to the set and measuring instruments and allow to warm up for at least 30 minutes.
2. Confirm the proper AC power voltage is being supplied.
3. The setting is made on basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
4. Use care not to disturb controls and switches not mentioned in the adjustment items.
5. Refer to adjustment settings and set user operated controls (BRIGHT, CONTRAST, PHASE, CHROMA, etc.) to the indicated positions.

## MEASUREING INSTRUMENTS AND FIXTURES

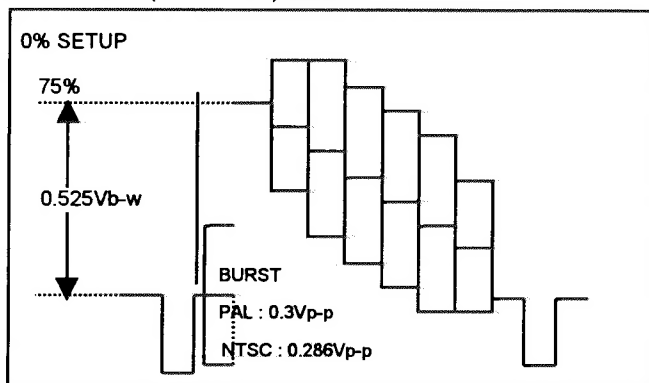
- DC voltmeter (digital voltmeter)
- Oscilloscope
- Signal generator (PAL/NTSC systems)
  - Colour bar and split color bar patterns
  - Crosshatch pattern
  - Cross pattern
  - Red raster pattern
  - Green raster pattern
  - Blue raster pattern
  - Philips pattern (including R-Y and B-Y)
  - TV resolution pattern

The wave form of signals refer following figure.

- Colour analyzer
- High voltage meter

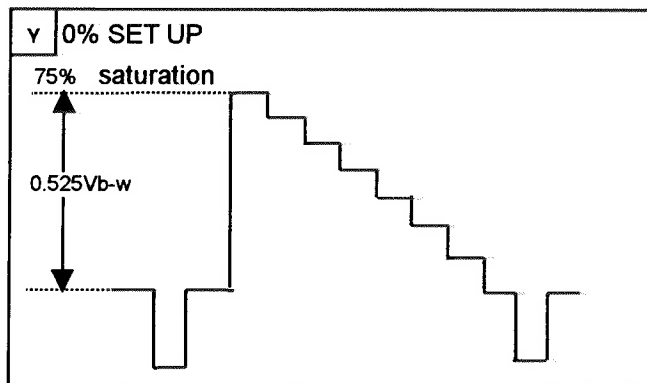
## VIDEO SIGNAL

### ● COLOUR BAR (PAL / NTSC) SIGNAL

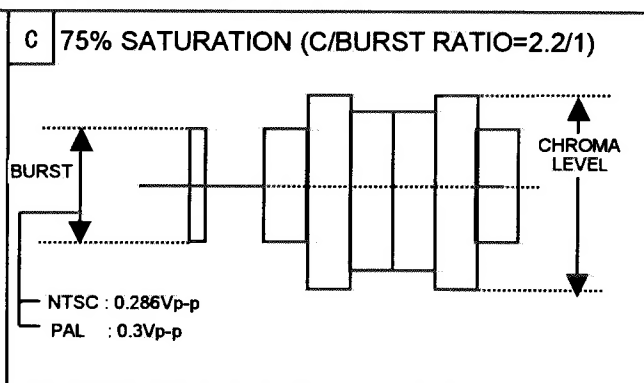


### Y/C SEPARATE SIGNAL

#### ● COLOUR BAR SIGNAL



#### ● COLOUR BAR SIGNAL



## ADJUSTMENT SETTINGS

### 1. Front controls

PHASE	00
CHROMA	00
BRIGHT	00
CONTRAST	00
VOLUME	20

### 2. Front switches

INPUT SELECT	VIDEO A
--------------	---------

### 3. MENU screen

SHARPNESS	00
COLOR TEMP	6500
COLOR SYSTEM	AUTO
ASPECT RATIO	4 - 3
BRIGHTNESS P.S	OFF

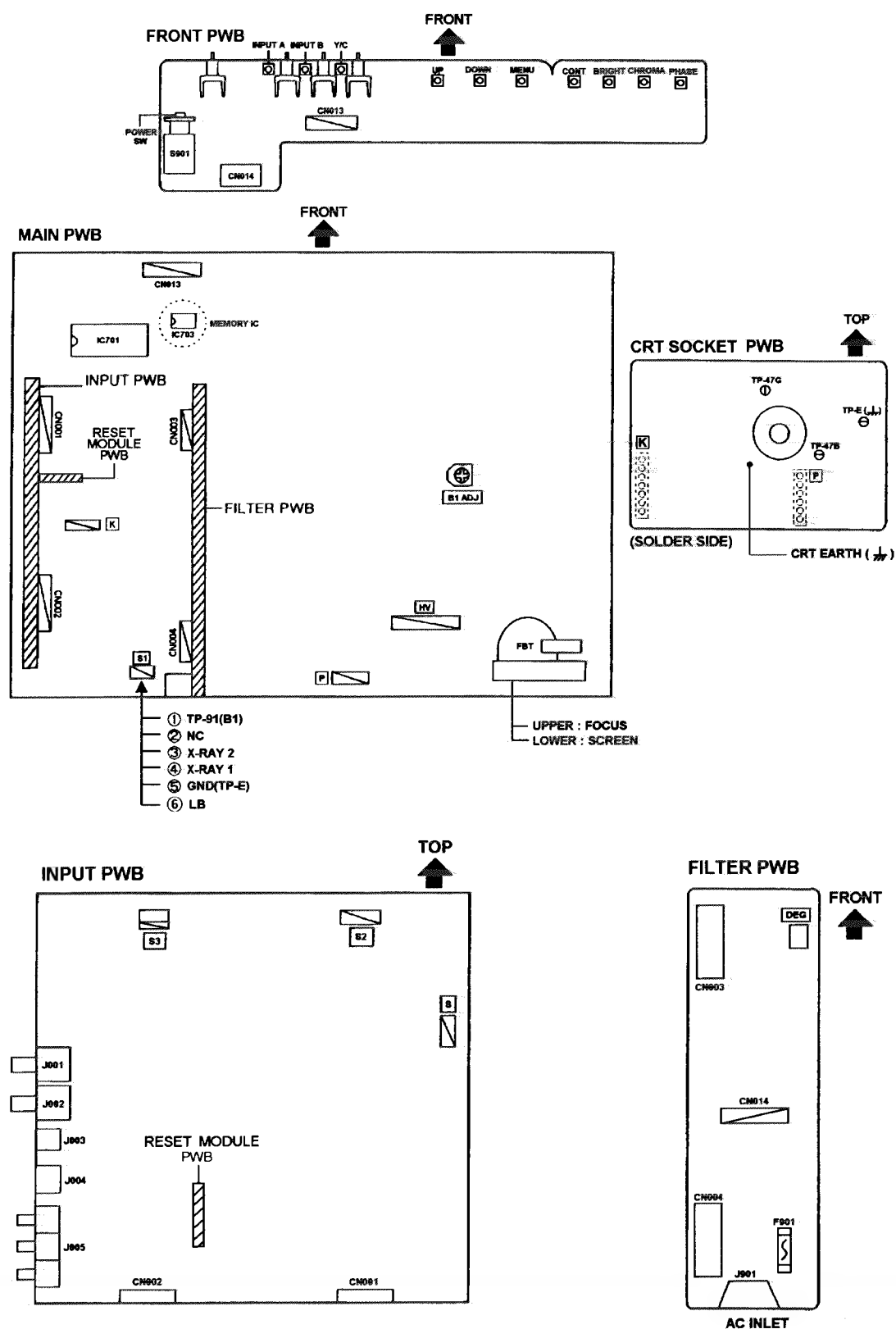
## FOCUS AND SCREEN ADJUSTMENT HOLES

- The FOCUS and SCREEN adjustment holes are on the rear panel.

### [CAUTION]

Be sure to use a non-metallic driver for adjusting there VRs.  
A metallic driver can cause damage by shorting.

## ADJUSTMENT LOCATIONS



## BASIC OPERATION OF SERVICE MENU

### 1. SERVICE MENU ITEMS

With the SERVICE MENU, various settings can be made, and they are broadly classified in the following items of adjustments.

Don't change the values, if not to necessary.

**SIGNAL BLOCK** ..... This mode adjusts the data of the various signal voltage controls.

**WHITE BALANCE BLOCK** ..... This mode adjusts the data of the WHITE BALANCE adjustment.

**DEFLECTION BLOCK** ..... This mode adjusts the data of the DEFLECTION circuit.

**CONTROL BLOCK** ..... This mode adjusts the whole of the systems

### 2. BASIC OPERATION OF THE SERVICE MENU

#### (1) HOW TO ENTER THE SERVICE MENU

- ① Press **MENU** key and **CONTRAST** key simultaneously.
- ② The letter "S" appears at the upper left of the screen.(Fig.1)
- ③ Press **MENU** key and **PHASE** key simultaneously.
- ④ The screen display "PLEASE DON'T TOUCH".(Fig.2)
- ⑤ Press + key or - key to display the SERVICE MENU as shown in Fig.3.

If step ④ state continues for more than 5 seconds without a further operation, the display extinguishes and the mode is released.

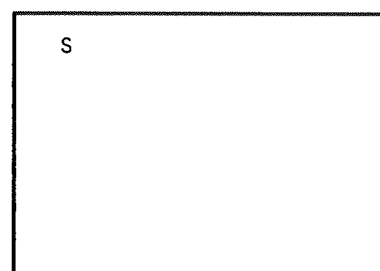


Fig. 1



Fig. 2

#### (2) SELECT OF SUB MENU SCREEN

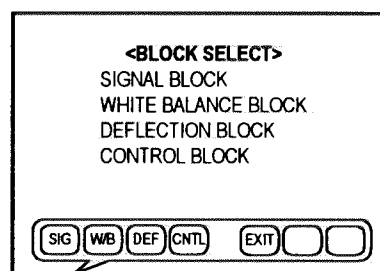
- While the SERVICE MAIN MENU is displayed.  
In accordance with the key control display at the lower side of the screen, operate the various items.

**SIGNAL BLOCK** ..... Press the **PHASE** key

**WHITE BALANCE BLOCK** ..... Press the **CHROMA** key

**DEFLECTION BLOCK** ..... Press the **BRIGHT** key

**CONTROL BLOCK** ..... Press the **CONTRAST** key



SERVICE MAIN MENU

Fig. 3

#### (3) SETTING VALUE CHANGES

- While the adjustment mode menu is displayed.(Fig.4)
- ① Press the +key to change the setting value in the + direction.
- ② Press the -key to change the setting value in the - direction.
- ③ Press the **PHASE** key or **CHROMA** key to change the adjustment items.

#### (4) SERVICE MENU EXIT

- ① When settings are completed, press **MENU** key.
- ② The SERVICE MAIN MENU returns.
- ③ Again press **MENU** key.  
The screen display extinguishes and the SERVICE MENU is exited.

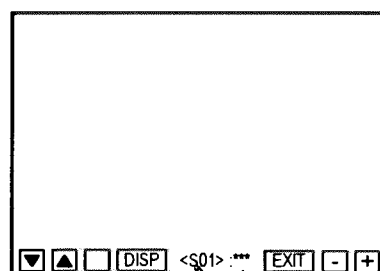


Fig. 4

### 3. HOW TO OPERATE SERVICE MENU ITEMS

#### ■ SIGNAL BLOCK

- ① Press the **PHASE** key from the <BLOCK SELECT> screen (SERVICE MAIN MENU).
- ② Then displays the SIGNAL BLOCK adjustment screen (Fig.5)
- ③ The select item is shown by the SERVICE Number at the lower of the screen.
- ④ Key control operation are displays as same as the screen lower.

The key operations of this mode are following as shown below.

**CONTRAST** key is the switch of the screen display. If necessary, you can shut off the display. Carefully, values of SERVICE MENU adjustment items are changed while shut off the screen display.

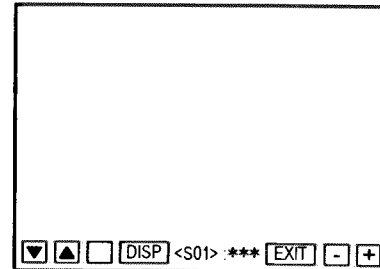
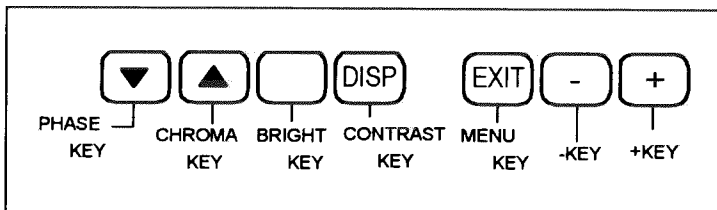


Fig. 5



- ⑤ Press the MENU key, then exit from the SIGNAL BLOCK screen to return to the <BLOCK SELECT> screen.

#### ■ WHITE BALANCE BLOCK

- ① Press the **CHROMA** key from the <BLOCK SELECT> screen (SERVICE MAIN MENU).
- ② Then screen displays the WHITE BALANCE BLOCK adjustment screen (Fig.6)

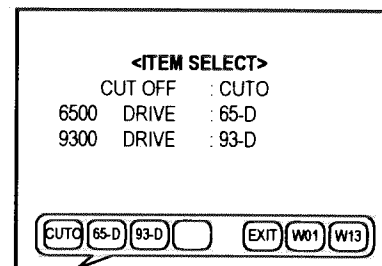
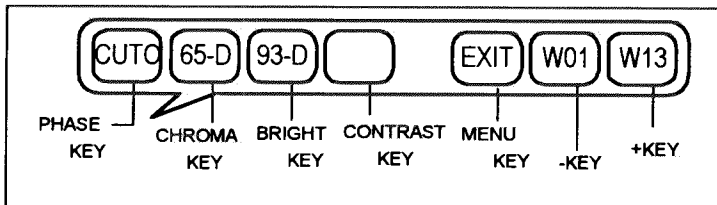


Fig. 6

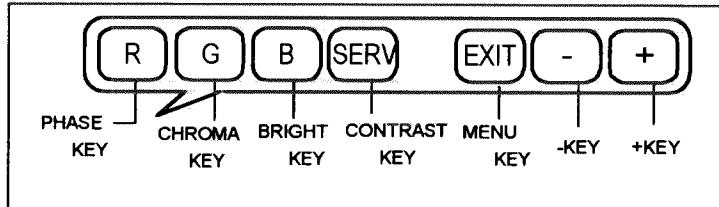
- ③ The select item is shown by the SERVICE Number at the lower of the screen.
- ④ Press the MENU key few times, then exit from the WHITE BALANCE BLOCK screen to return to the <BLOCK SELECT> screen.

# [ WHITE BALANCE Adjustment : METHOD 1 ]

Accordance with the screen, select the WHITE BALANCE mode that following below.

## ● CUTOFF adjustment mode (LOW LIGHT)

Press the **PHASE** key, then enter the CUTOFF adjustment mode as shown in Fig.7 (LOW LIGHT adjustment mode). In this case, key control is changed as shown below.



Press key of the SERV displaying. Shown one horizontal line on or off.

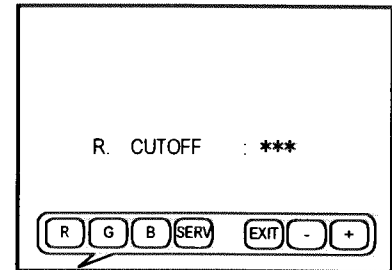


Fig. 7

## ● 6500 / 9300 drive adjustment mode (HIGH LIGHT)

Press the **CHROMA** or **BRIGHT** key, then enter the 6500 drive (or 9300 drive) adjustment mode as shown in Fig.8 (HIGH LIGHT adjustment mode). In this case, key control is changed as shown below.

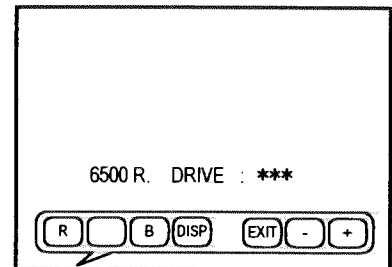
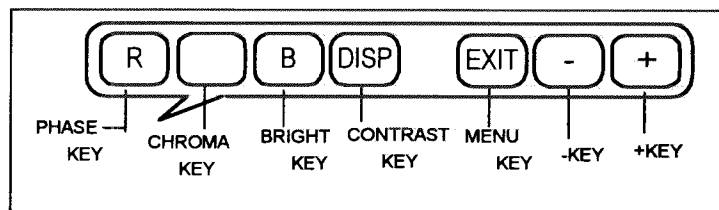


Fig. 8

# [ WHITE BALANCE Adjustment : METHOD 2 ]

Accordance with the screen, select the WHITE BALANCE mode that following below.

Press the **+key** or **-key**, then enter the WHITE BALANCE full adjustment mode as shown in Fig.9 (this mode both LOW LIGHT and HIGH LIGHT are able to adjust). In this case, key control is changed as shown below. The operation of this mode is as same as SIGNAL BLOCK adjustment operation.

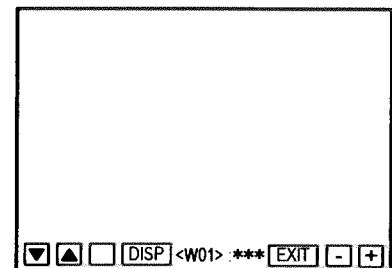
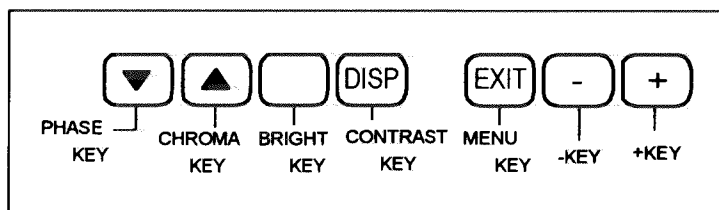


Fig. 9

■ DEFLECTION BLOCK

- ① Press the **BRIGHT** key from the <BLOCK SELECT> screen (SERVICE MAIN MENU).
- ② Then screen displays the DEFLECTION BLOCK adjustment screen (Fig.10).
- ③ The select item is shown by the SERVICE Number at the lower of the screen.
- ④ The adjustment screen changes by case of the signal that use for adjustment (Vertical frequency and screen aspect value).

SIGNAL		SCREEN DISPLAY
50Hz	4:3	<D0?>
60Hz	4:3	<DA?>
50Hz	16:9	<DB?>
60Hz	16:9	<DC?>

Key control operation are displays as same as the screen lower. The key operations of this mode are following as shown below.  
CONTRAST key is the switch of the screen display. If necessary, you can shut off the display. Carefully, values of SERVICE MENU adjustment items are changed while shut off the screen display.

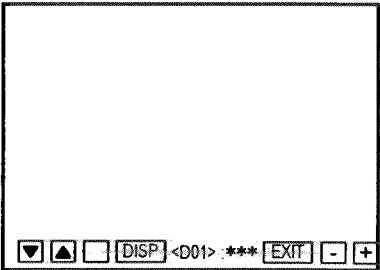
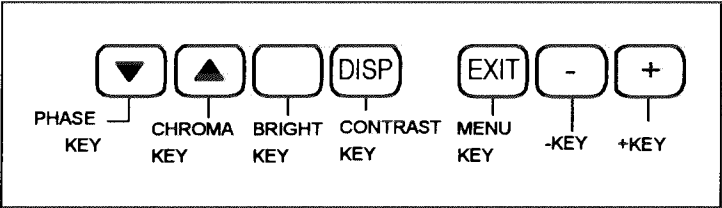


Fig. 10



■ CONTROL BLOCK (Don' t change the values, if not to necessary).

- ① Press the **CONTRAST** key from the <BLOCK SELECT> screen (SERVICE MAIN MENU).
- ② Then screen displays the CONTROL BLOCK adjustment screen (Fig.11)
- ③ The select item is shown by the SERVICE Number at the lower of the screen.
- ④ Key control operation are displays as same as the screen lower. The key operations of this mode are following as shown below.

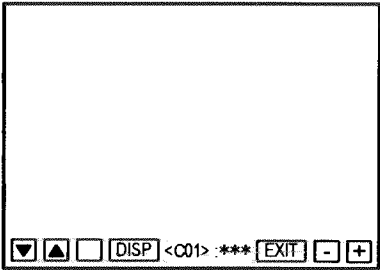
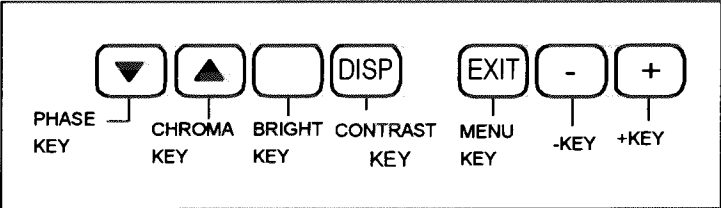
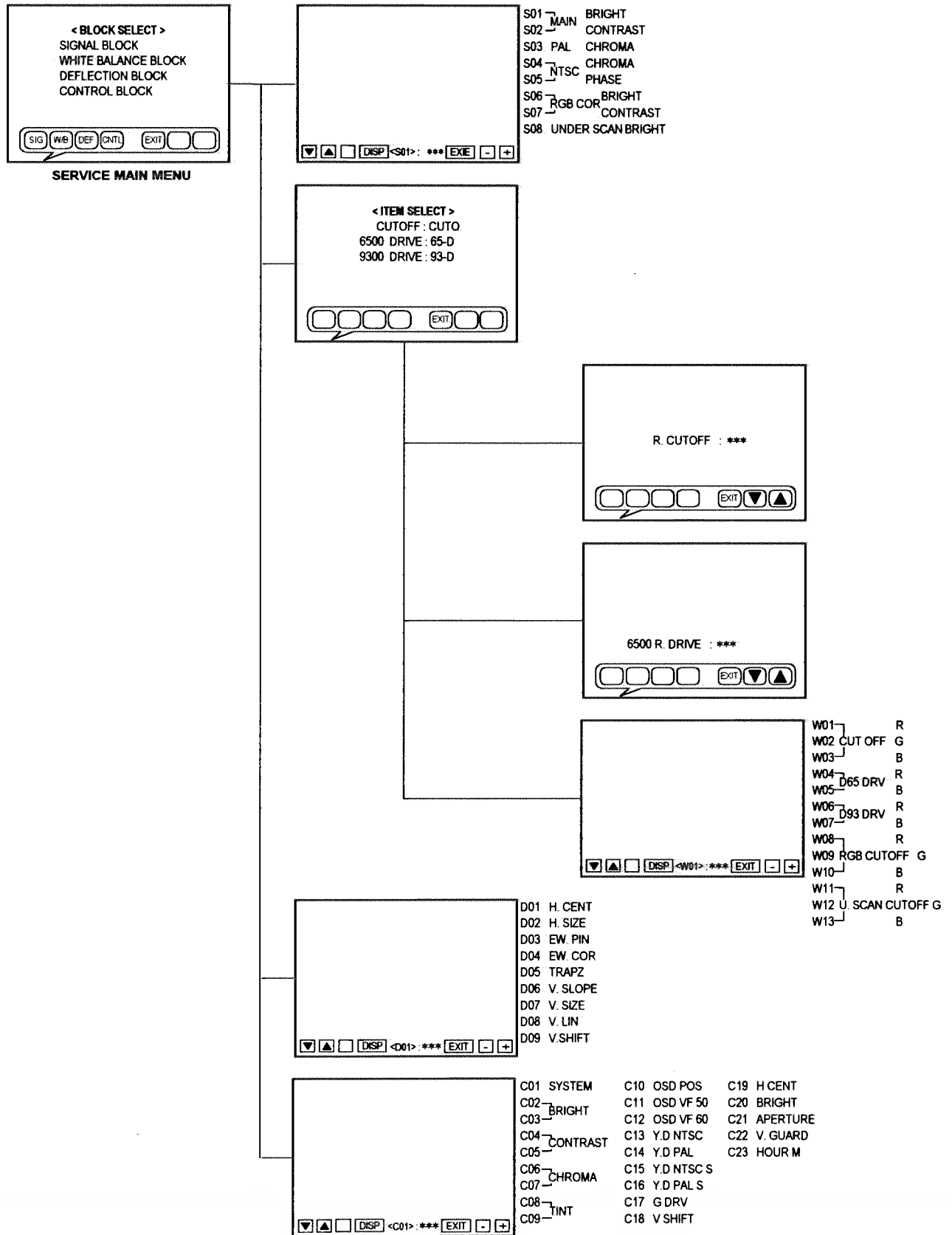


Fig. 11





## ■ INITIAL SETTINGS OF THE SERVICE MENU ADJUSTMENT ITEMS

### 1. SIGNAL BLOCK

SERVICE Number	ITEMS		VARIABLE RANGE	INITIAL VALUE	DESCRIPTION
S01	MAIN	BRIGHT	000 ~ 063	035	Avaliable
S02		CONTRAST	000 ~ 063	037	
S03	PAL	CHROMA	000 ~ 063	030	
S04	NTSC	CHROMA	000 ~ 063	029	
S05		PHASE	000 ~ 063	029	
S06	R.G.B CORRECT	BRIGHT	-128 ~ 000 ~ +127	000	
S07		CONTRAST	-128 ~ 000 ~ +127	000	
S08	UNDER SCAN	BRIGHT CORRECT	-128 ~ 000 ~ +127	000	

### 2. WHITE BALANCE BLOCK

SERVICE Number	ITEMS		VARIABLE RANGE	INITIAL VALUE	DESCRIPTION
W01	CUTOFF	R	000 ~ 127	010	Avaliable
W02		G	000 ~ 127	010	
W03		B	000 ~ 127	010	
W04	D65 DRIVE	R	000 ~ 063	041	
W05		B	000 ~ 063	022	
W06	D93 DRIVE	R	000 ~ 063	036	
W07		B	000 ~ 063	029	
W08	R.G.B CUTOFF CORRECT	R	-128 ~ 000 ~ +127	000	
W09		G	-128 ~ 000 ~ +127	000	
W10		B	-128 ~ 000 ~ +127	000	
W11	UNDER SCAN	R	-128 ~ 000 ~ +127	000	
W12	CUTOFF	G	-128 ~ 000 ~ +127	000	
W13	CORRECT	B	-128 ~ 000 ~ +127	000	

## 3. DEFLECTION BLOCK

SERVICE Number	ITEMS	VARIABLE RANGE	INITIAL VALUE	DESCRIPTION
D01	4 : 3 50Hz	HORIZONTAL CENTER	000 ~ 063	Avariable
D02		HORIZONTAL SIZE	000 ~ 063	
D03		EW-PIN CUSHION	000 ~ 063	Don't touch
D04		EW-CORRECTION	000 ~ 063	
D05		TRAPEZIUM	000 ~ 063	
D06		VERTICAL SLOPE	000 ~ 063	Avariable
D07		VERTICAL SIZE	000 ~ 063	
D08		VERTICAL LINEARITY	000 ~ 063	Don't touch
D09		VERTICAL SHIFT	000 ~ 063	Avariable
DA1	4 : 3 60Hz	HORIZONTAL CENTER	-128 ~ 000 ~ +127	Avariable
DA2		HORIZONTAL SIZE	-128 ~ 000 ~ +127	
DA3		EW-PIN CUSHION	-128 ~ 000 ~ +127	Don't touch
DA4		EW-CORRECTION	-128 ~ 000 ~ +127	
DA5		TRAPEZIUM	-128 ~ 000 ~ +127	
DA6		VERTICAL SLOPE	-128 ~ 000 ~ +127	Avariable
DA7		VERTICAL SIZE	-128 ~ 000 ~ +127	
DA8		VERTICAL LINEARITY	-128 ~ 000 ~ +127	Don't touch
DA9		VERTICAL SHIFT	-128 ~ 000 ~ +127	Avariable
DB1	16 : 9 50Hz	HORIZONTAL CENTER	-128 ~ 000 ~ +127	Reserved (Don't touch)
DB2		HORIZONTAL SIZE	-128 ~ 000 ~ +127	
DB3		EW-PIN CUSHION	-128 ~ 000 ~ +127	
DB4		EW-CORRECTION	-128 ~ 000 ~ +127	
DB5		TRAPEZIUM	-128 ~ 000 ~ +127	
DB6		VERTICAL SLOPE	-128 ~ 000 ~ +127	
DB7		VERTICAL SIZE	-128 ~ 000 ~ +127	
DB8		VERTICAL LINEARITY	-128 ~ 000 ~ +127	
DB9		VERTICAL SHIFT	-128 ~ 000 ~ +127	
DC1	16 : 9 60Hz	HORIZONTAL CENTER	-128 ~ 000 ~ +127	Reserved (Don't touch)
DC2		HORIZONTAL SIZE	-128 ~ 000 ~ +127	
DC3		EW-PIN CUSHION	-128 ~ 000 ~ +127	
DC4		EW-CORRECTION	-128 ~ 000 ~ +127	
DC5		TRAPEZIUM	-128 ~ 000 ~ +127	
DC6		VERTICAL SLOPE	-128 ~ 000 ~ +127	
DC7		VERTICAL SIZE	-128 ~ 000 ~ +127	
DC8		VERTICAL LINEARITY	-128 ~ 000 ~ +127	
DC9		VERTICAL SHIFT	-128 ~ 000 ~ +127	
DD1	UNDER SCAN	HORIZONTAL CENTER	-128 ~ 000 ~ +127	Reserve (Don't touch)
DD2		HORIZONTAL SIZE	-128 ~ 000 ~ +127	
DD3		EW-PIN CUSHION	-128 ~ 000 ~ +127	
DD4		EW-CORRECTION	-128 ~ 000 ~ +127	
DD5		TRAPEZIUM	-128 ~ 000 ~ +127	
DD6		VERTICAL SLOPE	-128 ~ 000 ~ +127	
DD7		VERTICAL SIZE	-128 ~ 000 ~ +127	
DD8		VERTICAL LINEARITY	-128 ~ 000 ~ +127	
DD9		VERTICAL SHIFT	-128 ~ 000 ~ +127	

SERVICE Number	ITEMS	VARIABLE RANGE	INITIAL VALUE	DESCRIPTION
DE1	UNDER SCAN 60Hz CORRECT	HORIZONTAL CENTER	-128 ~ 000 ~ +127	Reserve (Don't touch)
DE2		HORIZONTAL SIZE	-128 ~ 000 ~ +127	
DE3		EW-PIN CUSHION	-128 ~ 000 ~ +127	
DE4		EW-CORRECTION	-128 ~ 000 ~ +127	
DE5		TRAPEZIUM	-128 ~ 000 ~ +127	
DE6		VERTICAL SLOPE	-128 ~ 000 ~ +127	
DE7		VERTICAL SIZE	-128 ~ 000 ~ +127	
DE8		VERTICAL LINEARITY	-128 ~ 000 ~ +127	
DE9		VERTICAL SHIFT	-128 ~ 000 ~ +127	

#### 4. CONTROL BLOCK

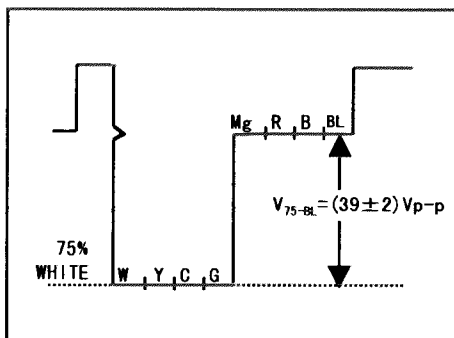
SERVICE Number	ITEM	VARIABLE RANGE	INITIAL VALUE	DESCRIPTION
C01	SYSTEM	000 ~ 011	002	Reserve (Don't touch)
C02	BRIGHT POINT	UP	000 ~ 063	
C03		DOWN	000 ~ 063	
C04	CONTRAST POINT	UP	000 ~ 063	
C05		DOWN	000 ~ 063	
C06	CHROMA POINT	UP	000 ~ 063	
C07		DOWN	000 ~ 063	
C08	TINT POINT	UP	000 ~ 063	
C09		DOWN	000 ~ 063	
C10	OSD POSITION	000 ~ 010	002	
C11	OSD VERTICAL FREQUENCY 50Hz	000 ~ 010	006	
C12	OSD VERTICAL FREQUENCY 60Hz	000 ~ 010	000	
C13	Y DELAY NTSC VIDEO	000 ~ 015	001	
C14	Y DELAY PAL VIDEO	000 ~ 015	005	
C15	Y DELAY NTSC S VIDEO	000 ~ 015	005	
C16	Y DELAY PAL S VIDEO	000 ~ 015	007	
C17	G DRIVE	000 ~ 063	031	
C18	VERTICAL SHIFT RGB	-128 ~ 000 ~ +127	000	
C19	HORIZONTAL CENTER RGB	-128 ~ 000 ~ +127	000	
C20	BRIGHT SERVICE	000 ~ 063	031	
C21	APERTURE CENTER	000 ~ 015	006	
C22	VERTICAL GUARD	000 ~ 001	001	
C23	HOOR METER	001 ~	001	

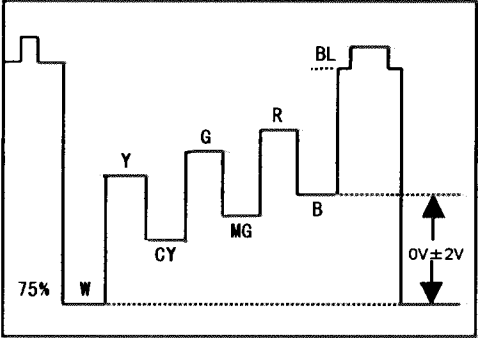
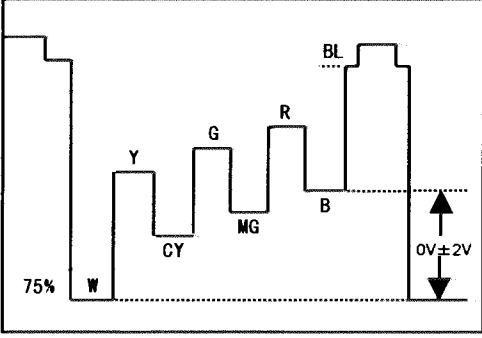
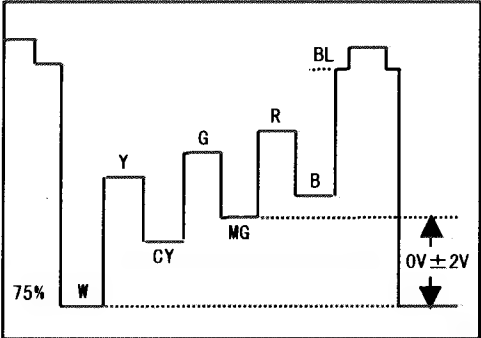
## ■ ADJUSTMENT

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
B1 power supply adjustment	Voltmeter Variable transformer	TP-91(B1): S1 ① pin TP-E(GND): S1 ⑤ pin [MAIN PWB]  SCREEN VR [In FBT]	B1 adjust VR [MAIN PWB]	<ol style="list-style-type: none"> <li>1. Set power supply voltage to 230V.</li> <li>2. Select WHITE BALANCE BLOCK mode.</li> <li>3. Select CUTOFF adjustment mode (LOW LIGHT mode).</li> <li>4. Press "SERV" switch as CONTRAST key, to display the horizontal line.</li> <li>5. Adjust the SCREEN VR to disappear the horizontal line.</li> <li>6. Adjust B1 adjust VR to set the B1 voltage to 53V <math>\pm 0.2V</math>.</li> <li>7. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line to press the "SERV" switch.</li> </ol>
High voltage check	High voltage meter Signal generator (All-black signal)	CRT Anode  SCREEN VR [In FBT]		<ol style="list-style-type: none"> <li>1. Set power supply voltage to 230V.</li> <li>2. Select WHITE BALANCE BLOCK mode.</li> <li>3. Select CUTOFF adjustment mode (LOW LIGHT mode).</li> <li>4. Press "SERV" switch as CONTRAST key, to display the horizontal line.</li> <li>5. Adjust the SCREEN VR to disappear the horizontal line.</li> <li>6. Connect the high voltage meter to the CRT anode and check for 23.8~26.2kV.</li> <li>7. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line to press the "SERV" switch.</li> </ol>
Focus adjustment	Signal generator (Resolution pattern)	FOCUS VR [Upper knob : In FBT]		<ol style="list-style-type: none"> <li>1. Adjust the Focus VR for optimum focus where moire is not apparent.</li> <li>2. Darken the picture and adjust the focus by tuning counter-clockwise from the position where focus is poor.</li> <li>3. Alternately repeat the above steps to obtain the optimum position.</li> </ol> <p>● Focus can be adjusted easily by displaying the menu.</p>

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
<b>White balance (Low Light) adjustment</b>	<b>Signal generator (Resolution pattern, Colour bar Pattern)</b>	<b>SCREEN VR [Lower knob : In FBT]</b>	<b>W01 R CUTOFF W02 G CUTOFF W03 B CUTOFF [SERVICE MENU]</b>	<ol style="list-style-type: none"> <li>1. Supply the resolution pattern.</li> <li>2. Select the WHITE BALANCE BLOCK from the SERVICE MAIN MENU.</li> <li>3. Select the CUTOFF mode.</li> <li>4. Press "SERV" switch as CONTRAST key, to display the horizontal line. Carefully adjust the SCREEN VR to horizontal line appears faintly, not to shine it much.</li> <li>5. Confirm the values of the R.G.B CUTOFF are the 30.</li> <li>6. Gradually turn the SCREEN VR from the left to the right direction to bring one of the red, green and blue colours faintly visible.</li> <li>7. Then select the CUTOFF switch (R, G or B) that colour except for appears first, and adjusting 2 colours CUTOFF values by pressing the +key, and make horizontal line visible white.</li> <li>8. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line to press the "SERV" switch.</li> </ol>
<b>White balance (Hight Light) 6500K</b>	<b>Signal generator (Resolution pattern)  Colour Analyzer or Colour temperature meter</b>		<b>W04 R DRIVE 6500 W05 B DRIVE 6500 [SERVICE MENU]</b>	<ol style="list-style-type: none"> <li>1. Supply the resolution pattern.</li> <li>2. Select the WHITE BALANCE BLOCK from the SERVICE MAIN MENU.</li> <li>3. Select the 65-D mode (High light 6500 mode).</li> <li>4. Apply the sensor of the Colour temperature meter to the CRT surface, part of the 100% white, adjust the R drive or B drive to setting 6500K (<math>x=0.313</math>, <math>y=0.329</math>).</li> <li>5. Exit the SERVICE MENU by pressing the MENU key.</li> <li>6. Check the white balance tracking is optimum when CONTRAST and BRIGHT are up and down.</li> </ol>
<b>White balance (High Light) 9300K</b>	<b>Signal generator (Resolution pattern)  Colour Analyzer or Colour temperature meter</b>		<b>W06 R DRIVE 9300 W07 B DRIVE 9300 [SERVICE MENU]</b>	<ol style="list-style-type: none"> <li>1. Supply the resolution pattern.</li> <li>2. Select the WHITE BALANCE BLOCK from the SERVICE MAIN MENU.</li> <li>3. Select the 93-D mode (High light 9300 mode).</li> <li>4. Apply the sensor of the Colour temperature meter to the CRT surface, part of the 100% white, adjust the R drive or B drive to setting 9300K (<math>x=0.283</math>, <math>y=0.297</math>).</li> <li>5. Exit the SERVICE MENU by pressing the MENU key.</li> <li>6. Check the white balance tracking is optimum when CONTRAST and BRIGHT are up and down.</li> </ol>

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
Bright adjustment	Signal generator (Sprit colour bar)		S01 (BRIGHT) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a sprit colour bar signal.</li> <li>2. Select the SIGNAL BLOCK from the SERVICE MAIN MENU.</li> <li>3. Select the S01 item.</li> <li>4. Adjust S01 to where the sprit colour bar 0% black component faintly brightens.</li> <li>5. Check it to on and off the screen display by turning the "DISP" switch.</li> </ol>
Contrast adjustment	Signal generator (Colour bar) Oscillo-scope	TP-47G TP-E(↗) [CRT SOCKET PWB]	S02 (CONTRAST) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a full colour bar signal. (75 / 0 / 75 / 0)</li> <li>2. Connect the oscillo-scope probe to TP-47G and TP-E(↗).</li> <li>3. Select the SIGNAL BLOCK from SERVICE MAIN MENU.</li> <li>4. Select the S02 item.</li> <li>5. Adjust S02 to set the waveform level to <math>(39 \pm 2)</math> Vp-p as shown in figure.</li> </ol>



Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
<b>PAL CHROMA adjustment</b>	Signal generator (Colour bar)  Oscillo-scope	TP-47B TP-E(↗) [CRT SOCKET PWB]	S03 (PAL CHROMA) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a PAL colour bar signal.</li> <li>2. Connect the oscillo-scope probe to TP-47B and TP-E(↗).</li> <li>3. Select the SIGNAL BLOCK from SERVICE MAIN MENU.</li> <li>4. Select the S03 item.</li> <li>5. Adjust the S03 to take the level difference in waveform is <math>0V \pm 2V</math> as shown in figure.</li> </ol>
				
<b>NTSC CHROMA adjustment</b>	Signal generator (Color bar)  Oscillo-scope	TP-47B TP-E(↗) [CRT SOCKET PWB]	S04 (NTSC CHROMA) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a NTSC 3.58 colour bar signal.</li> <li>2. Connect the oscillo-scope probe to TP-47B and TP-E(↗).</li> <li>3. Select the SIGNAL BLOCK from SERVICE MAIN MENU.</li> <li>4. Select the S04 item.</li> <li>5. Adjust the S04 to take the level difference in waveform is <math>0V \pm 2V</math> as shown in figure.</li> </ol>
				
<b>NTSC PHASE adjustment</b>	Signal generator (Colour bar)  Oscillo-scope	TP-47B TP-E(↗) [CRT SOCKET PWB]	S05 (NTSC PHASE) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a NTSC 3.58 colour bar signal.</li> <li>2. Connect the oscillo-scope probe to TP-47B and TP-E(↗).</li> <li>3. Select the SIGNAL BLOCK from SERVICE MAIN MENU.</li> <li>4. Select the S05 item.</li> <li>5. Adjust the S05 to take the level difference in waveform is <math>0V \pm 2V</math> as shown in figure.</li> </ol>
				



## DEFLECTION CIRCUIT ADJUSTMENT

There are 4 modes of DEFLECTION ADJUSTMENT depending upon the kind of input signals.

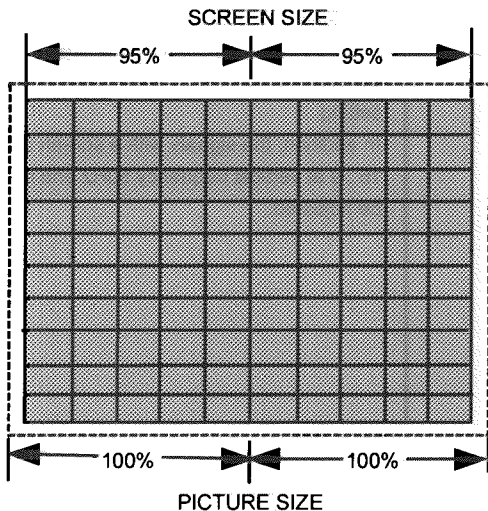
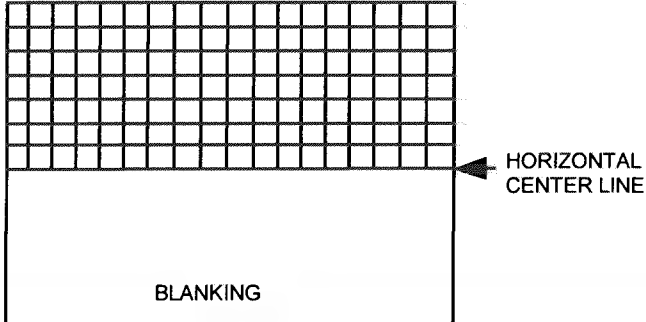
The adjustments must always be carried out in regular sequence given below.

- ① ASPECT RATIO 4 : 3      VERTICAL FREQUENCY 50Hz
- ② ASPECT RATIO 4 : 3      VERTICAL FREQUENCY 60Hz
- ③ ASPECT RATIO 16 : 9      VERTICAL FREQUENCY 50Hz
- ④ ASPECT RATIO 16 : 9      VERTICAL FREQUENCY 60Hz

If you change the figures in the course of the adjustments by returning to the preceding steps, all adjustments come to nothing.

The screen aspect ratio 4 : 3 at 50Hz (PAL) is regarded as the reference value for all adjustments. The other values obtained in the adjustments using other signals become the off-set values as opposed to the reference values.

The signals with a screen aspect ratio 4 : 3 at vertical frequency 60Hz shall only be checked. In addition, the signals with a screen aspect ratio 16 : 9 at vertical frequency 50Hz and 60Hz shall not be adjusted.

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
H.CENTER H.SIZE adjustment	Signal generator (Cross-hatch pattern)		D01 (H.CENTER) D02 (H.SIZE) [SERVICE MENU]	<ol style="list-style-type: none"> <li>1. Supply a PAL (50Hz) cross hatch signal.</li> <li>2. Select DEFLECTION BLOCK from SERVICE MAIN MENU.</li> <li>3. Select D01 item.</li> <li>4. Adjust D01 to align the picture center with the CRT center.</li> <li>5. Adjust D02 to set horizontal size to 95%.</li> <li>6. Repeat above step 4 and 5 to adjust correctly.</li> </ol>
				
V.SLOPE adjustment	Signal generator (Cross-hatch pattern)		D06 (V.SLOPE) [SERVICE MENU]	<ol style="list-style-type: none"> <li>7. Select D06 item, screen shows BLANKING ZONE automatically.</li> <li>8. Adjust D06 to cross-hatch center and border line of BLANKING ZONE agreement.</li> </ol>
				

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
<b>V.SHIFT</b> <b>V.SIZE</b> <b>adjustment</b>	<b>Signal generator</b> <b>(Cross-hatch</b> <b>pattern)</b>		<b>D09 (V.SHIFT)</b> <b>D07 (V.SIZE)</b> <b>[SERVICE MENU]</b>	9. Select D09 item. 10. Adjust D09 to align the picture center in vertical direction with the CRT center. 11. Adjust D07 to set vertical size to 95%.
				<p>Make sure that the adjustments is properly done on the screen of 60Hz 4:3, 50Hz 16:9 and 60Hz 16:9. If screen of the deflection adjustment is not optimum in 60Hz 4 : 3 mode, adjust the deflection setting.</p> <p>In addition, the signals with a screen aspect ratio 16 : 9 at vertical frequency 50Hz and 60Hz shall not be adjusted.</p>

## PURITY, CONVERGENCE

### PURITY ADJUSTMENT

1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.

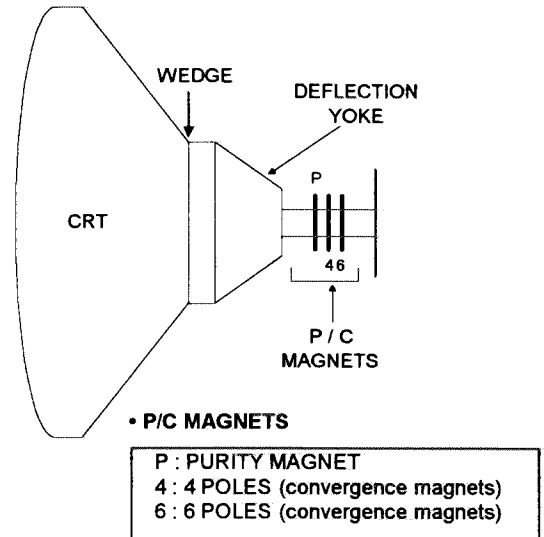


Fig.1

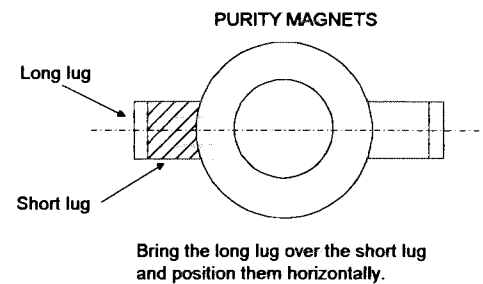


Fig.2

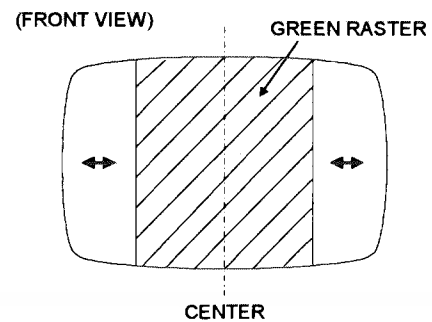


Fig.3

### STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta(red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

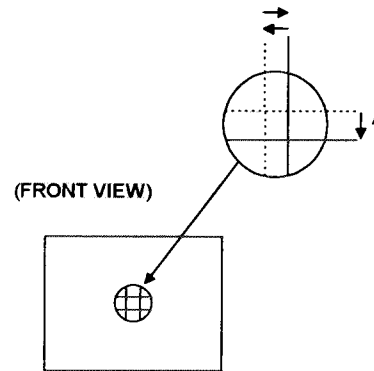


Fig.1

### DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

(FRONT VIEW)

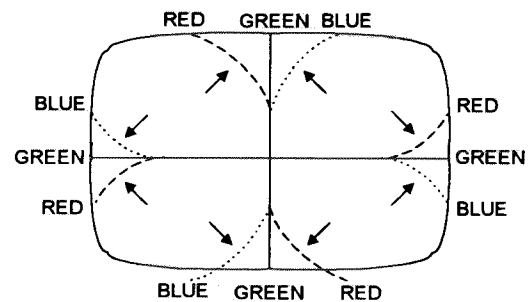


Fig.2

(FRONT VIEW)

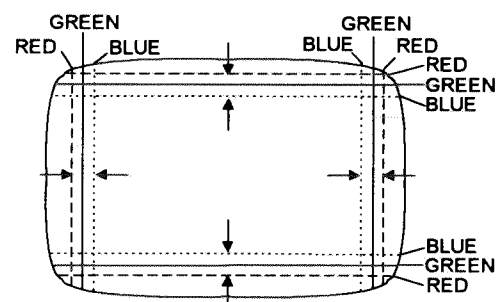


Fig.3

- After adjustment, fix the wedge at the original position.  
Fasten the retainer screw of the deflection yoke.  
Fix the 6 magnets with glue.

# SELF DIAGNOSIS FUNCTION

## 1.OUTLINE

This model includes a SELF DIAGNOSIS FUNCTION that checks the circuit operating status and in event of malfunction, displays and stores the data in a memory. The data are stored in an I<sup>2</sup>C memory.

Fault detection starts with the I<sup>2</sup>C bus and is performed according to the input states of the control lines connected to the MAIN CPU.

## 2.USAGE

### SELF DIAGNOSIS FUNCTION mode entry

- (1) While press the **MENU** key and **CHROMA** key simultaneously, and push the MAIN POWER switch on.
- (2) Then displays the SELF DIAGNOSIS FUNCTION screen. The screen indicates as shown in the table and the SELF DIAGNOSIS FUNCTION mode is entered. If in event a malfunction at RASTER not display, at this time POWER LED flashes.

PROTECTOR	
B1	: ○
X-RAY	: ○
BUS	
MEMORY	: × 2
TV-PRO	: ○
AV-SW	: ○

CAUSE	LED FLASHING CYCLE
X-RAY PROTECTOR	0.1 sec on / 0.1 sec off cycles
OVER CURRENT PROTECTOR	1.0 sec on / 1.0 sec off cycles

### SELF DIAGNOSIS FUNCTION mode release

Turn the power switch to off or disconnect the power cord from AC outlet.

In this way, not to clear the error counts.

### Reset the error count

While entered in this mode, press the **MENU** key **BRIGHT** key and simultaneously. Then clear the error count of the each item.

### Fault history

The fault history counts up to a maximum of 9 times for each item. If the number of times exceeds 9, the display remains at 9. The fault history remains stored in the memory until deleted.

## CONTENTS

CHECK ITEM	DISPLAY	DETECTION CONTENTS
POWER DEF CIRCUIT	B1 X-RAY	Over current protector operation and over voltage protector operation.
MEMORY IC AND DATA	MEMORY	Normal memory IC read / write operation
SINGLE CHIP TV PROCESSOR	TV-PRO	Normal IC101 (IF/DET/V/C/DEF) operation
INPUT SIGNAL AND SWITCHS	AV-SW	Normal signal switch IC (I/O) operation

TM-1700PN-S

# TM-1700PN-S STANDARD CIRCUIT DIAGRAM

## NOTE ON USING CIRCUIT DIAGRAMS

### 1. SAFETY

The components identified by the  $\Delta$  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

### 2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1) Input signal : PAL Colour bar signal
  - (2) Setting positions of each knob/button and variable resistor : Original setting position when shipped
  - (3) Internal resistance of tester : DC 20k  $\Omega$  /V
  - (4) Oscilloscope sweeping time : H  $\Rightarrow$  20 $\mu$ S/div  
: V  $\Rightarrow$  5mS/div  
: Others  $\Rightarrow$  Sweeping time is specified
  - (5) Voltage values : All DC voltage values
- \* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

### 3. INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209  $\rightarrow$  R209

### 4. INDICATIONS ON THE CIRCUIT DIAGRAM

#### (1) Resistors

##### ● Resistance value

- No unit : [ $\Omega$ ]
- K : [K  $\Omega$ ]
- M : [M  $\Omega$ ]

##### ● Rated allowable power

- No indication : 1/4[W]
- Others : As specified

##### ● Type

- No indication : Carbon resistor
- OMR : Oxide metal film resistor
- MFR : Metal film resistor
- MPR : Metal plate resistor
- UNFR : Uninflammbly resistor
- FR : Fusible resistor

\* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

#### (2) Capacitors

##### ● Capacitance value

- 1 or higher : [pF]
- less than 1 : [ $\mu$ F]

##### ● Withstand voltage

- No indication : DC50[V]
- Others : DC withstand voltage [V]
- AC indicated : AC withstand voltage [V]

\* Electrolytic Capacitors

47/50[Example]: Capacitance value [ $\mu$ F]/withstand voltage[V]



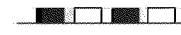
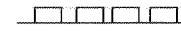
##### ● Type

- No indication : Ceramic capacitor
- MY : Mylar capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- MF : Metalized film capacitor
- TF : Thin film capacitor
- BP : Bipolar electrolytic capacitor
- TAN : Tantalum capacitor

##### (3) Coils



- No unit : [ $\mu$ H]
- Others : As specified

##### (4) Power Supply

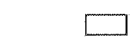
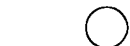

-  : B1
-  : B2
-  : 8V
-  : 5V

\* Respective voltage values are indicated





##### (5) Test point

-  : Test point
-  : Only test point display

##### (6) Connecting method

-  : Connector
-  : Wrapping or soldering
-  : Receptacle

##### (7) Ground symbol

-  : LIVE side ground
-  : ISOLATED(NEUTRAL) side ground
-  : EARTH ground
-  : DIGITAL ground

## 5. NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : ( $\perp$ ) side GND and the ISOLATED(NEUTRAL) : ( $\perp$ ) side GND. Therefore, care must be taken for the following points.

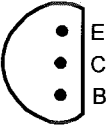
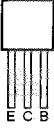
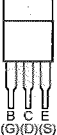
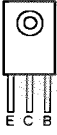
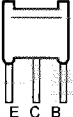
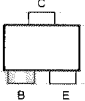
- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus ( oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.


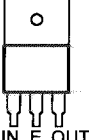
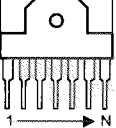
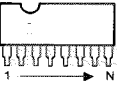
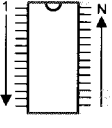
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

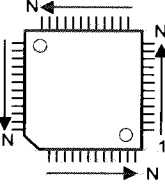
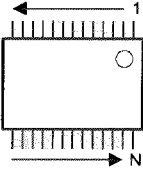
# CONTENTS

SEMICONDUCTOR SHAPES .....	2-2
BLOCK DIAGRAM .....	2-3
CIRCUIT DIAGRAMS	
INPUT PWB CIRCUIT DIAGRAM .....	2-5
CRT SOCKET PWB CIRCUIT DIAGRAM .....	2-7
MAIN PWB AND FILTER PWB CIRCUIT DIAGRAM .....	2-9
MAIN PWB AND FRONT PWB CIRCUIT DIAGRAM .....	2-11
PATTERN DIAGRAMS	
MAIN PWB PATTERN [FX-1102A] .....	2-13
INPUT PWB PATTERN [FX-6058A] .....	2-15
CRT SOCKET PWB PATTERN [FX-3053A] .....	2-16
FRONT PWB PATTERN [FX-4051A] .....	2-17
FILTER PWB PATTERN [FX-9060A] .....	2-18
RESET MODULE PWB PATTERN [FX-M010A] .....	2-19

## SEMICONDUCTOR SHAPES

TRANSISTOR					
BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

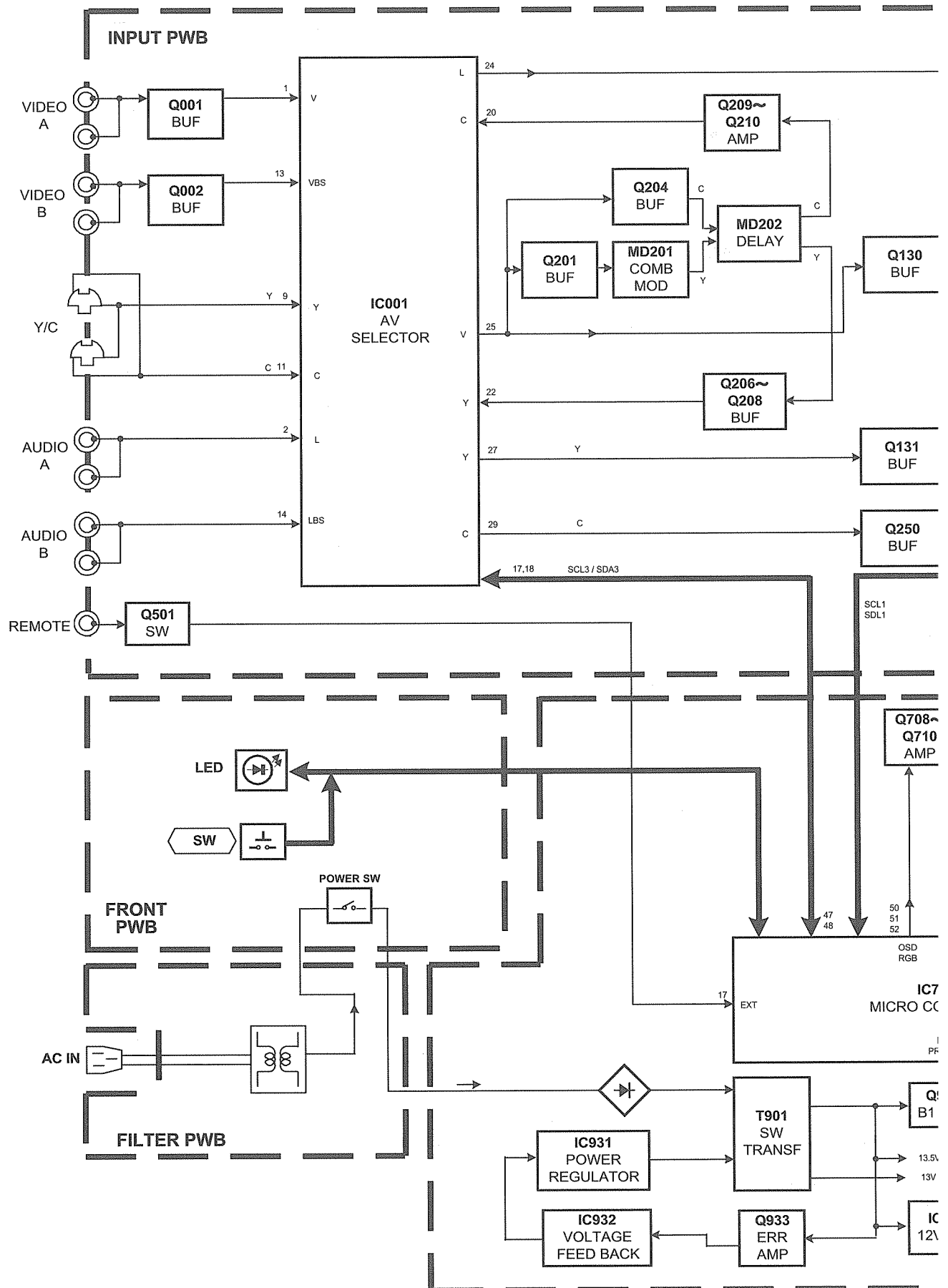
IC				
BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

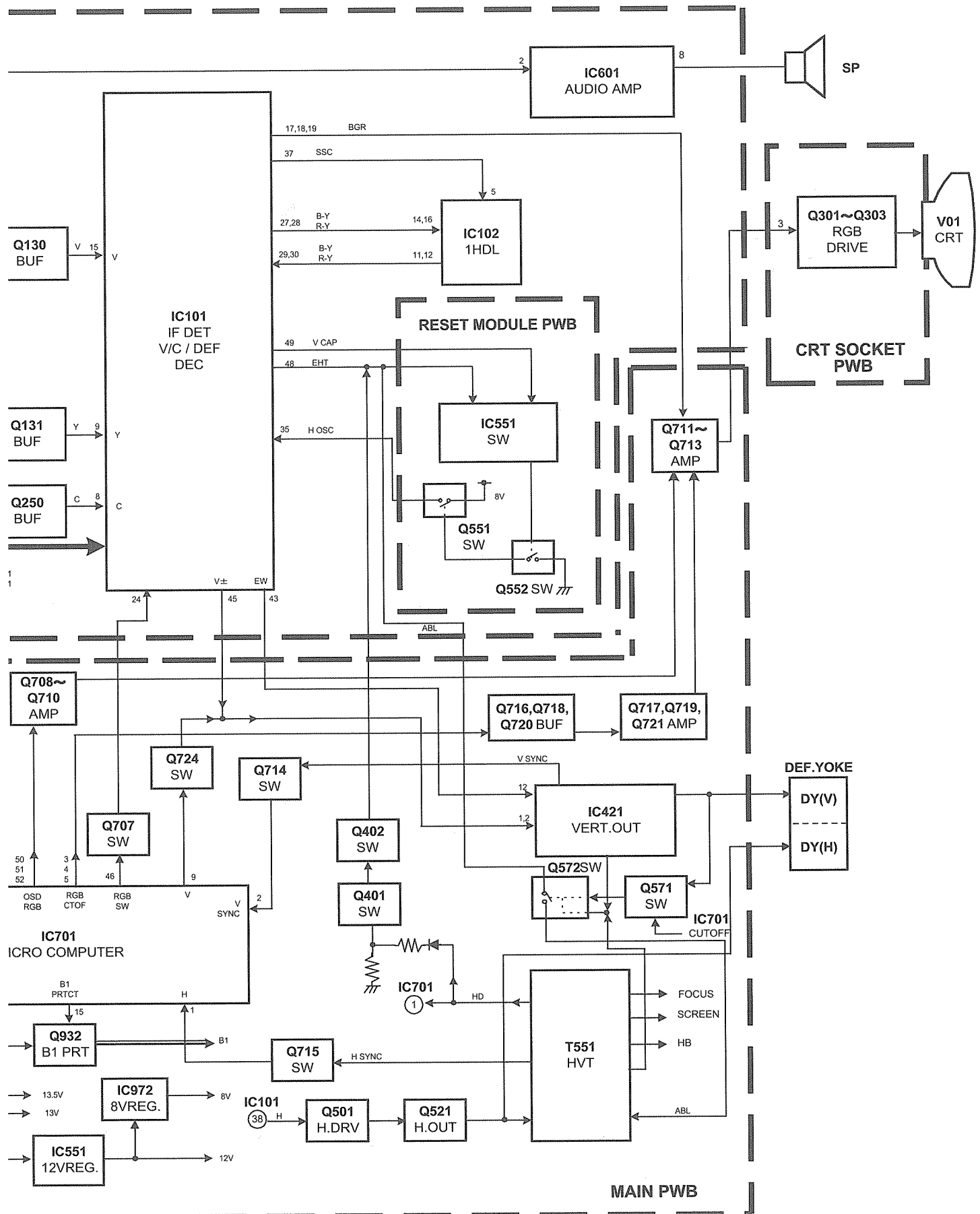
CHIP IC		
TOP VIEW		
		



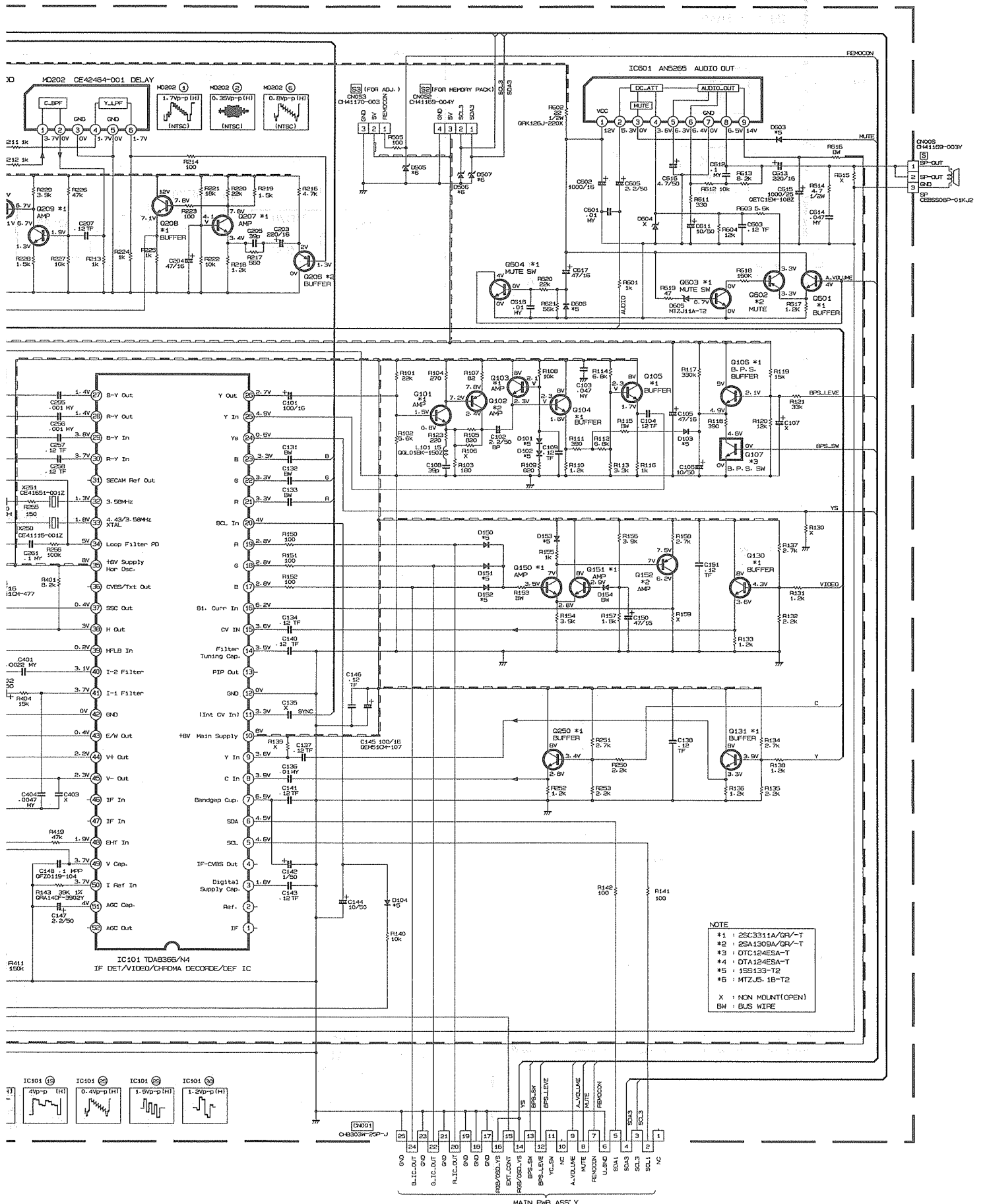


## BLOCK DIAGRAM

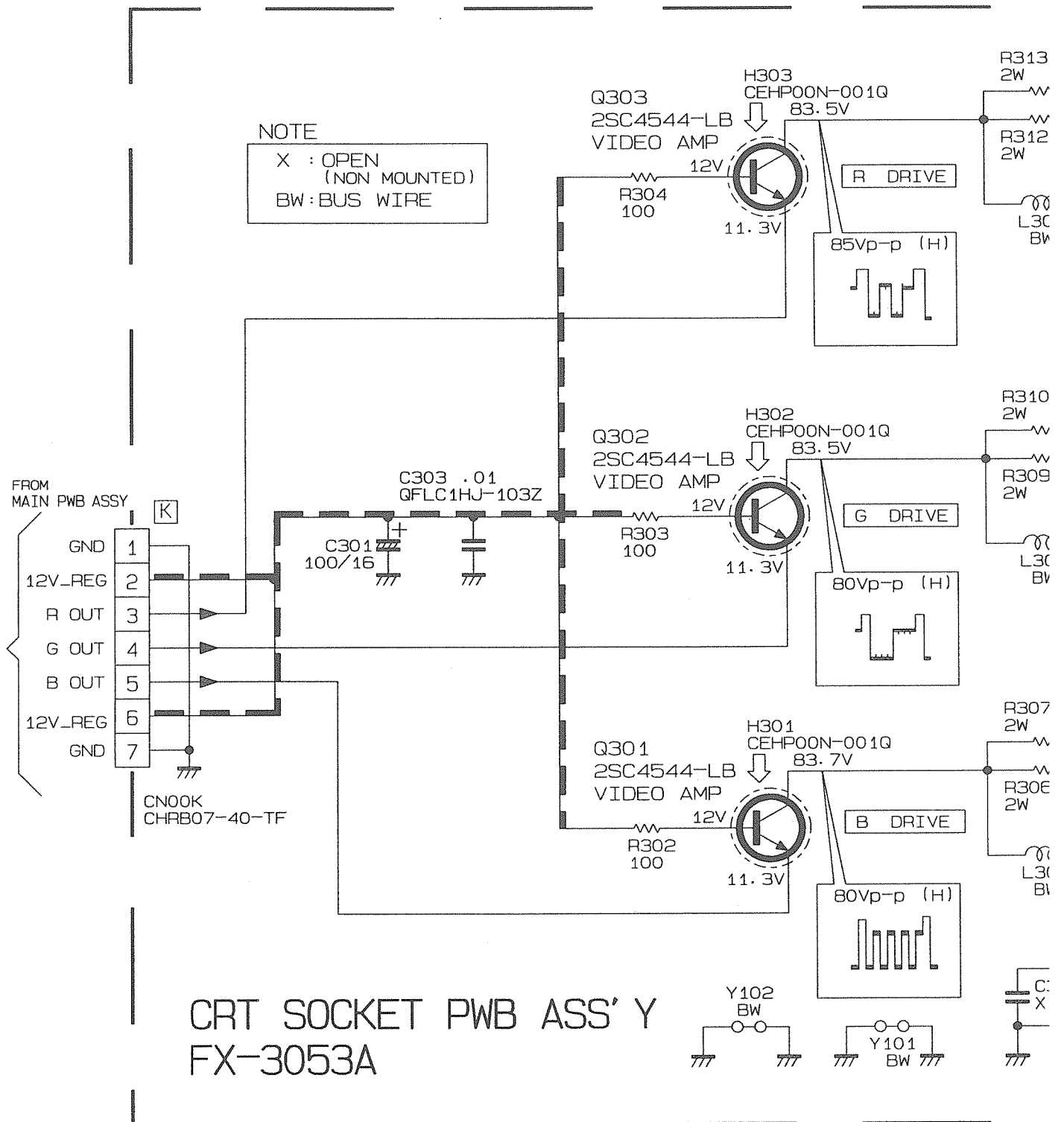


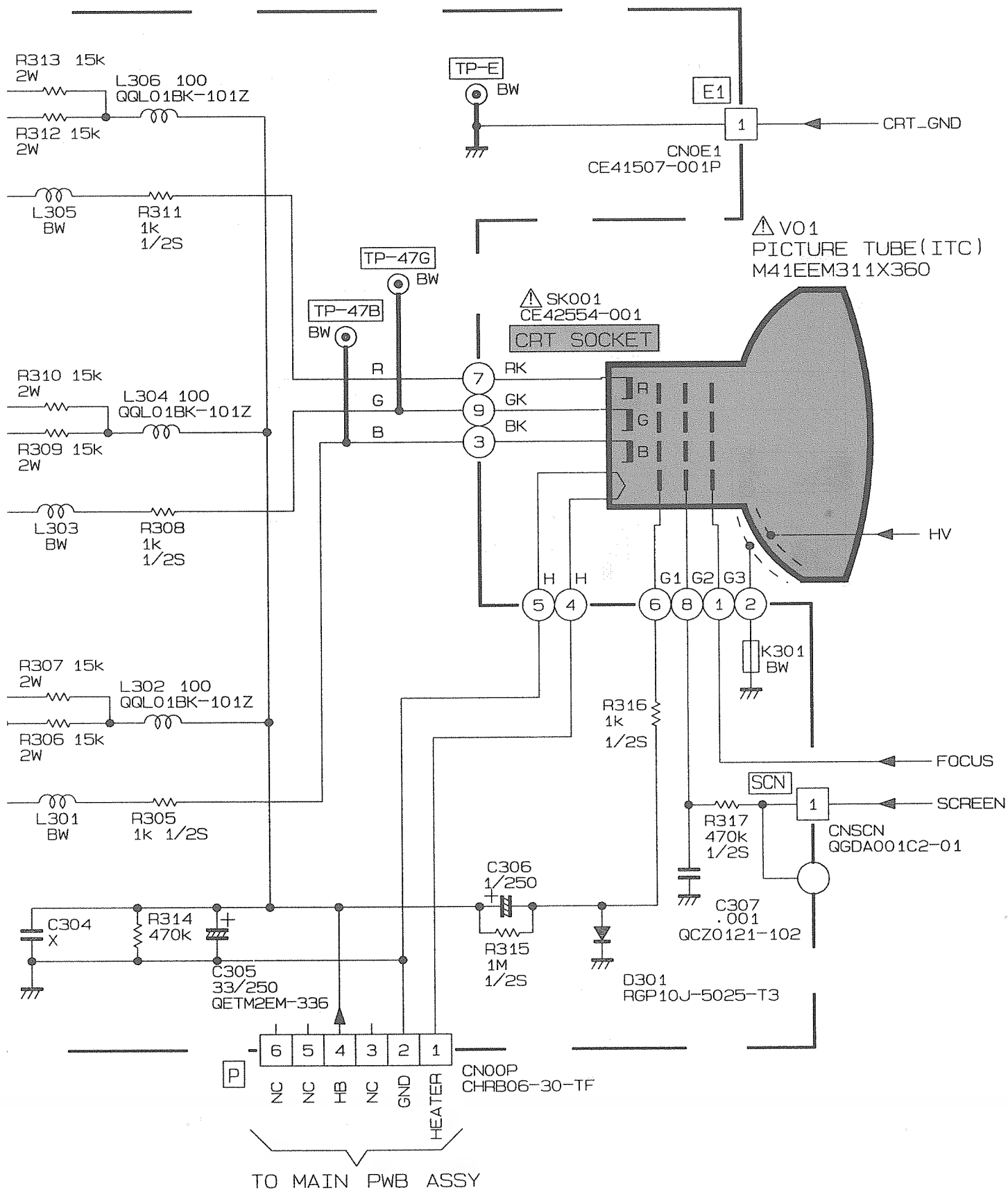




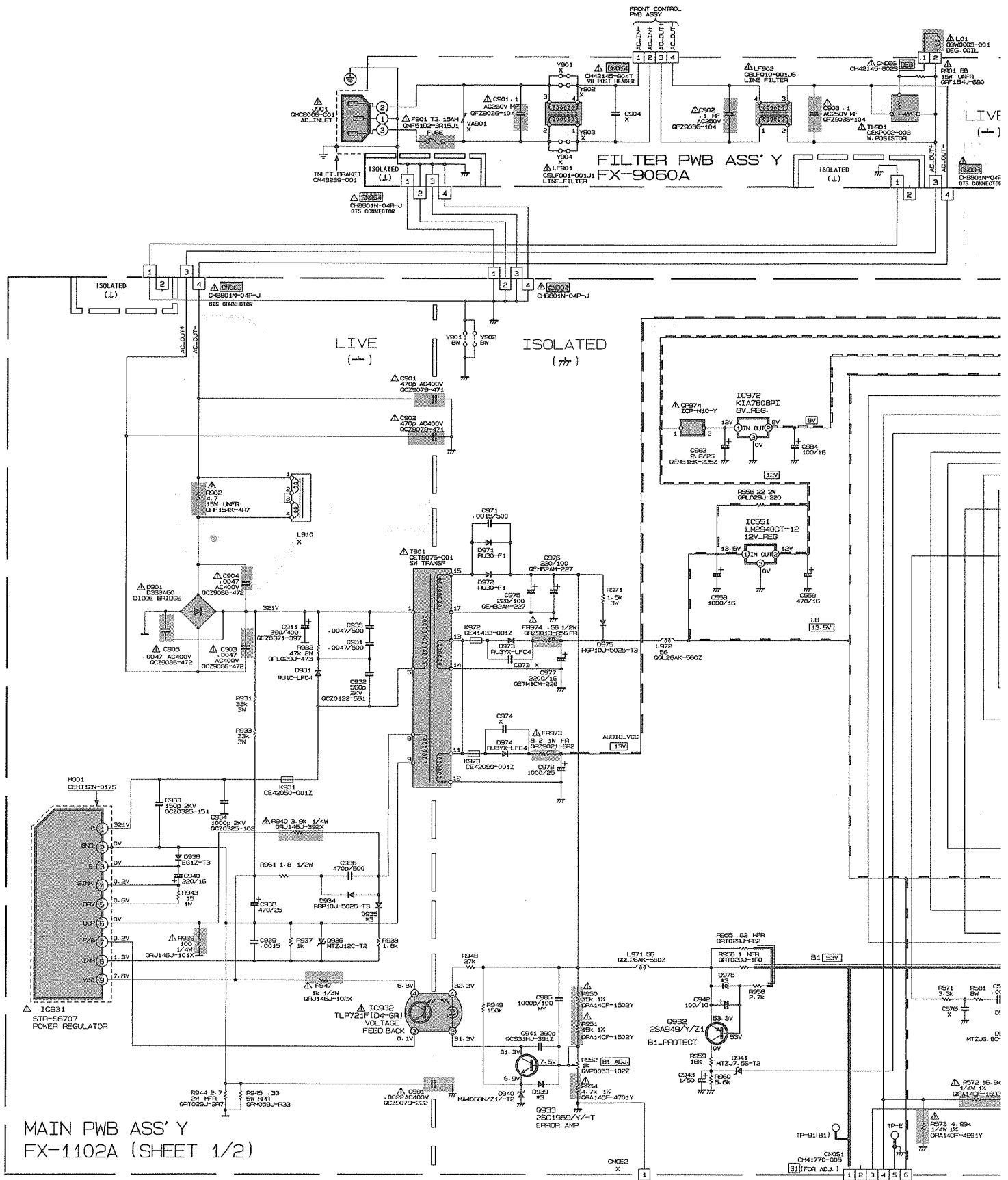


## CRT SOCKET PWB CIRCUIT DIAGRAM





MAIN PWB AND FILTER PWB CIRCUIT DIAGRAM





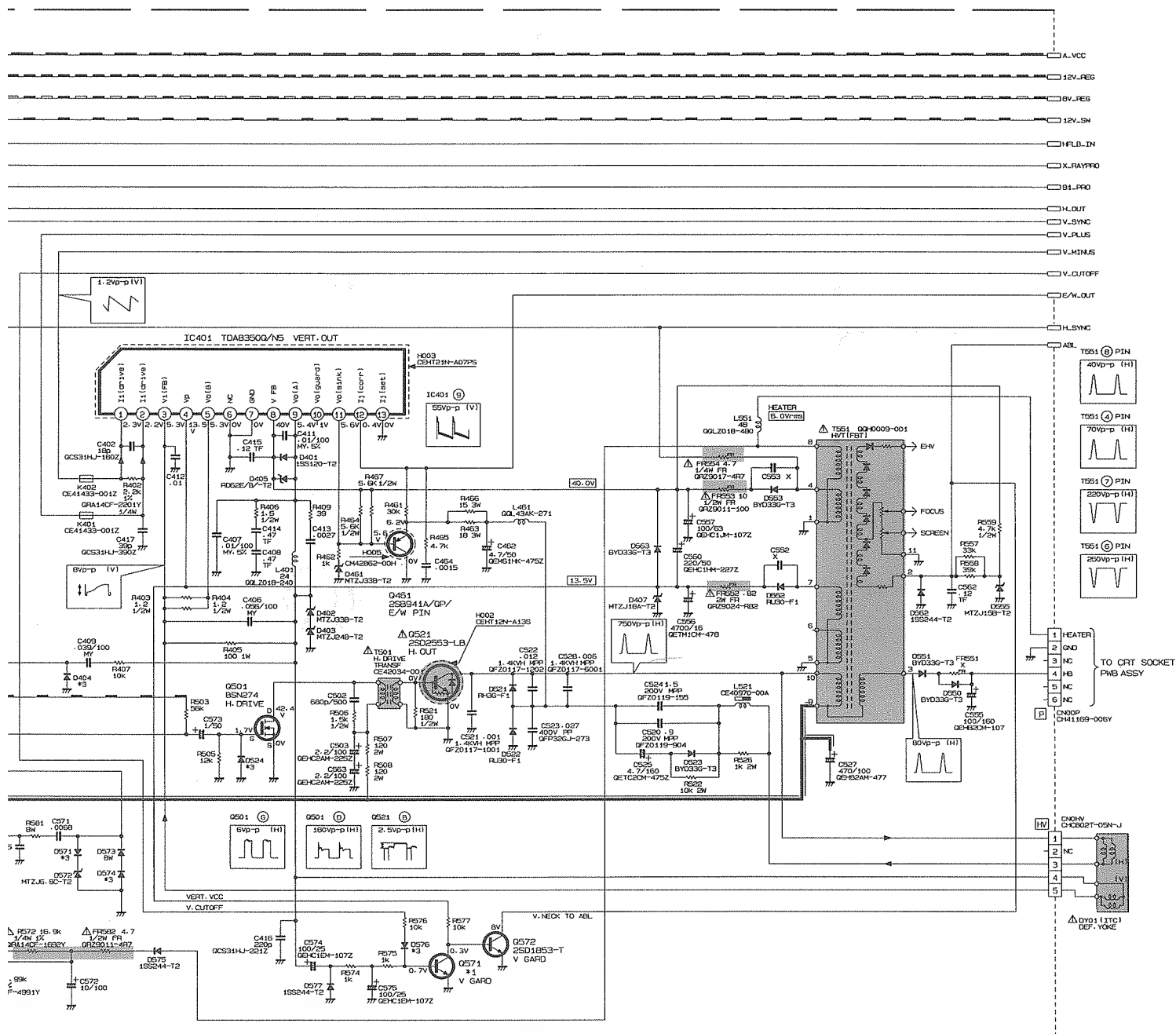
LIVE  
(-1-)

ENC03  
Q-B901N-04R-J  
QTS CONNECTOR

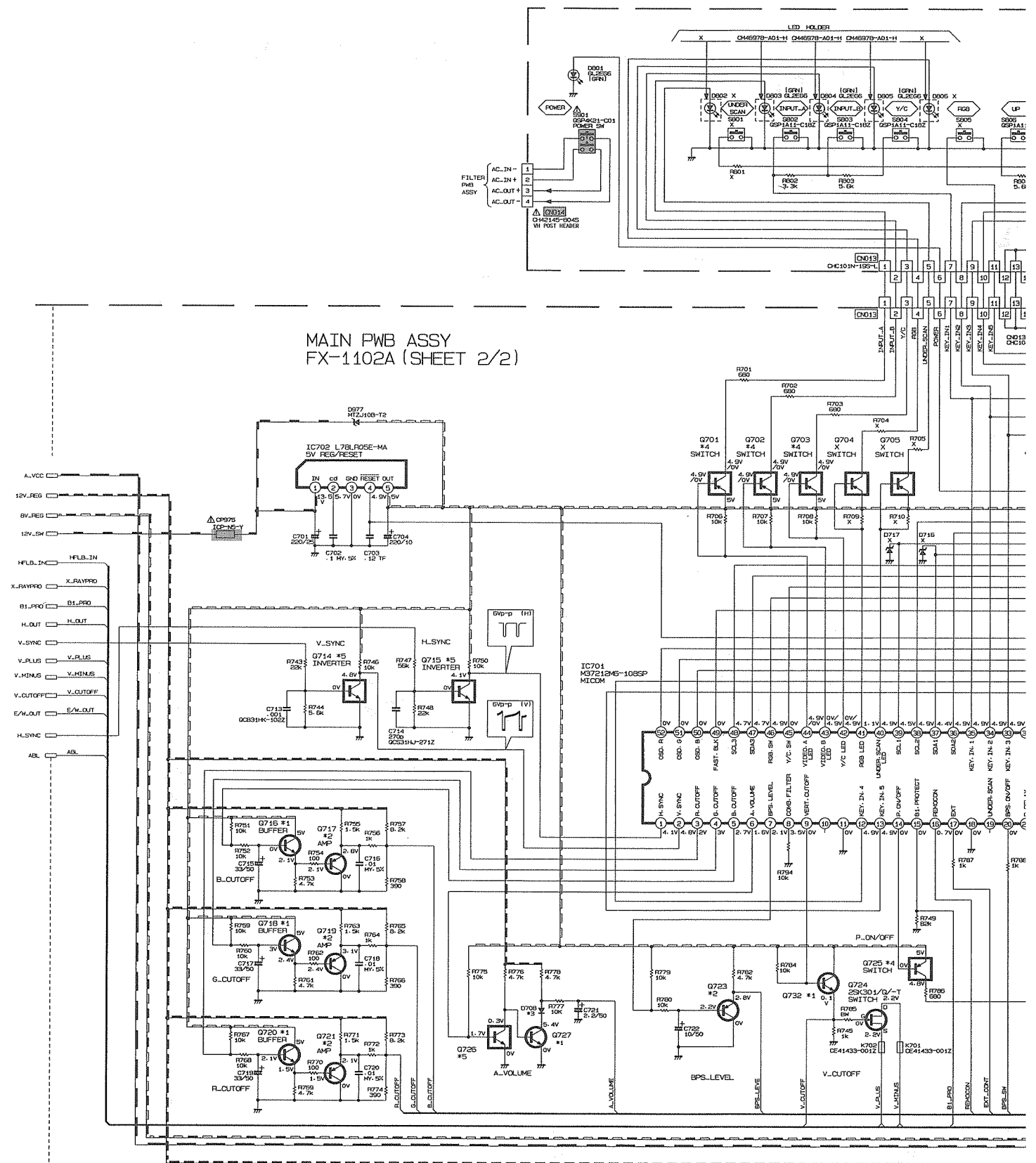
**NOTE**

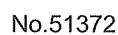
- \*1 : 2SC1740S/QF/-T  
\*2 : 2SA933S/QF/-T  
\*3 : 1SS133-T2  
\*4 : DTA114TS-T  
\*5 : DTC114TS-T

```
X  : NON MOUNT(OPEN)
FW : BUS WIRE
```



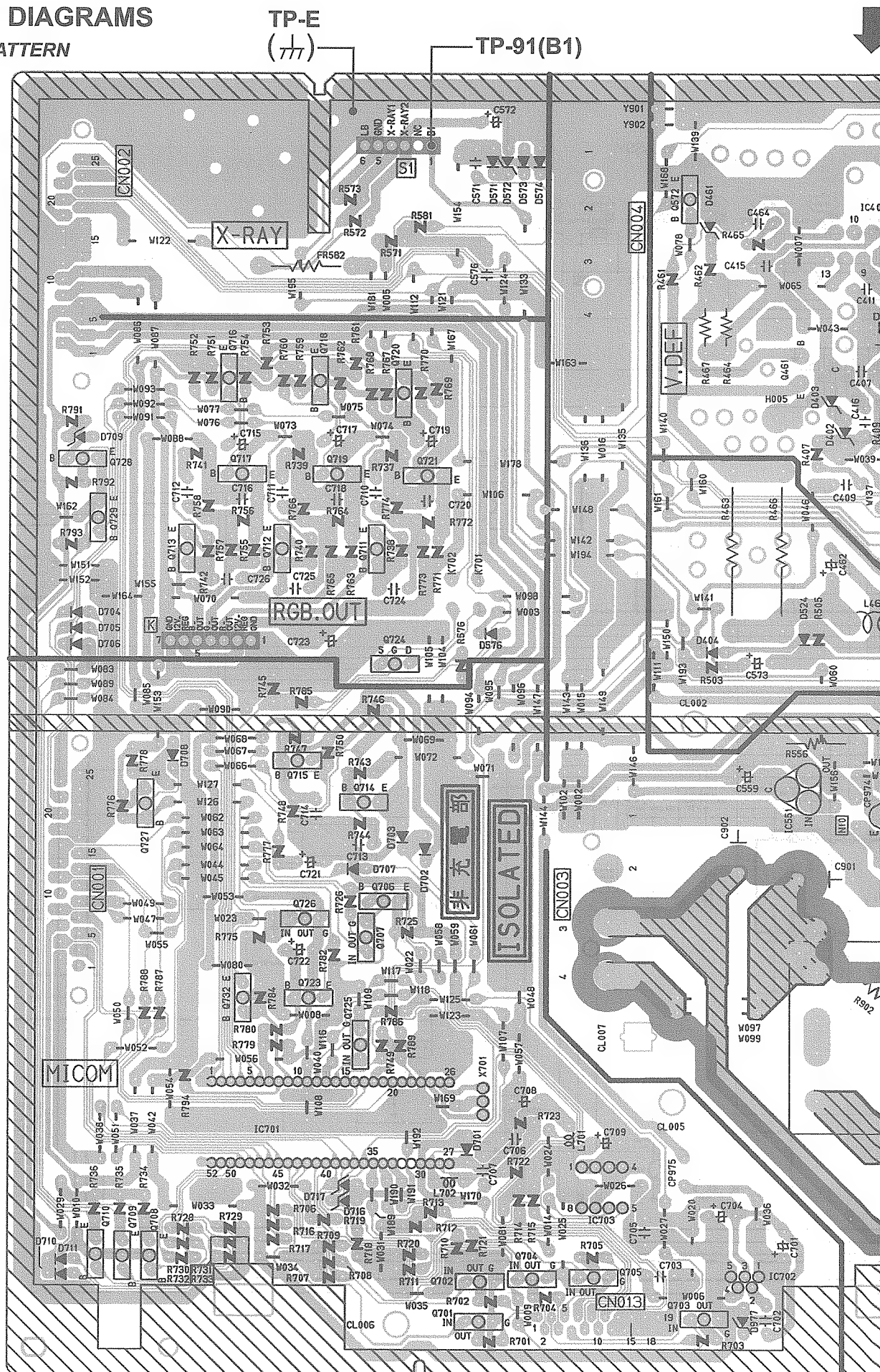
## MAIN PWB AND FRONT PWB CIRCUIT DIAGRAM



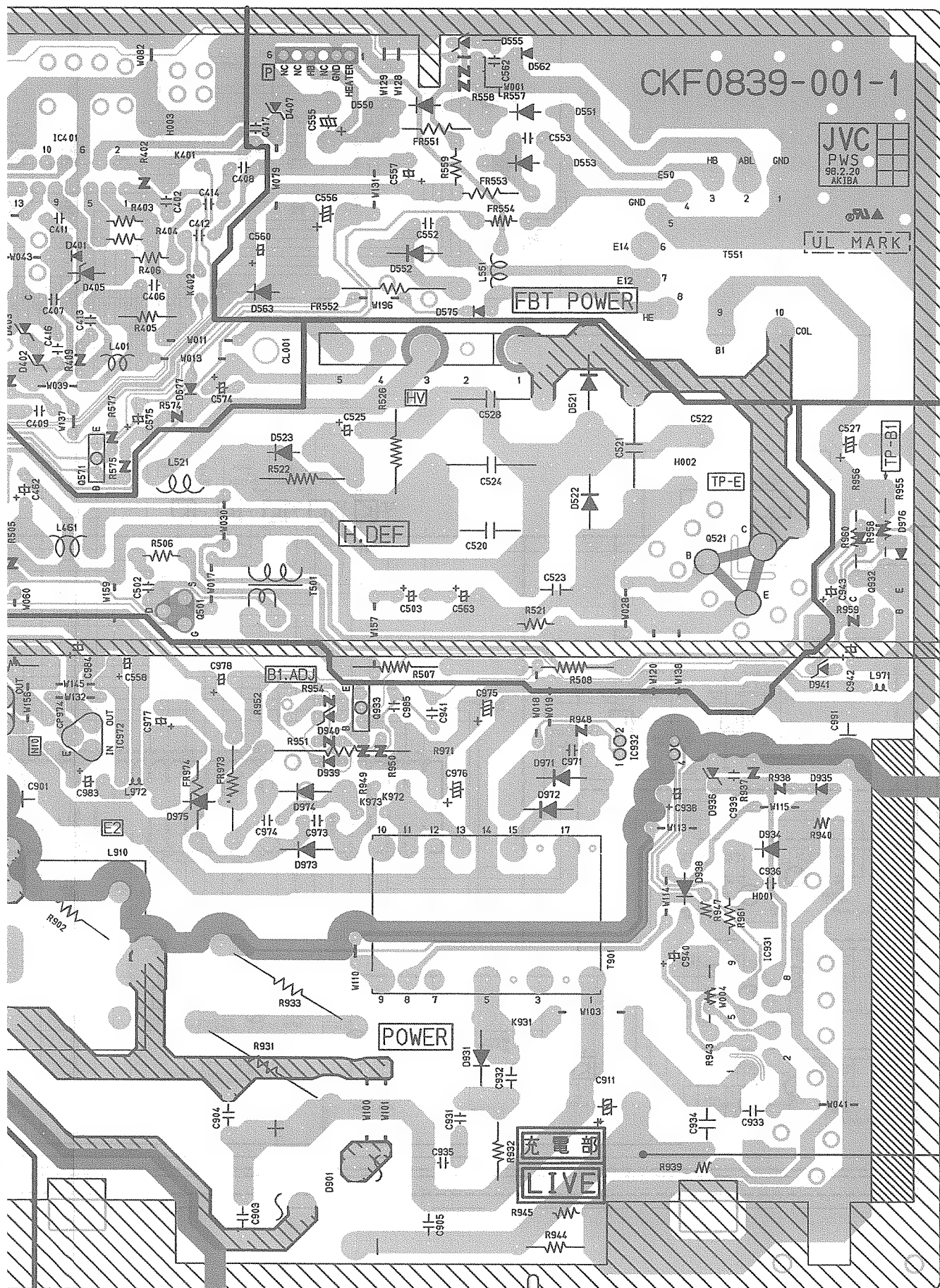


## PATTERN DIAGRAMS

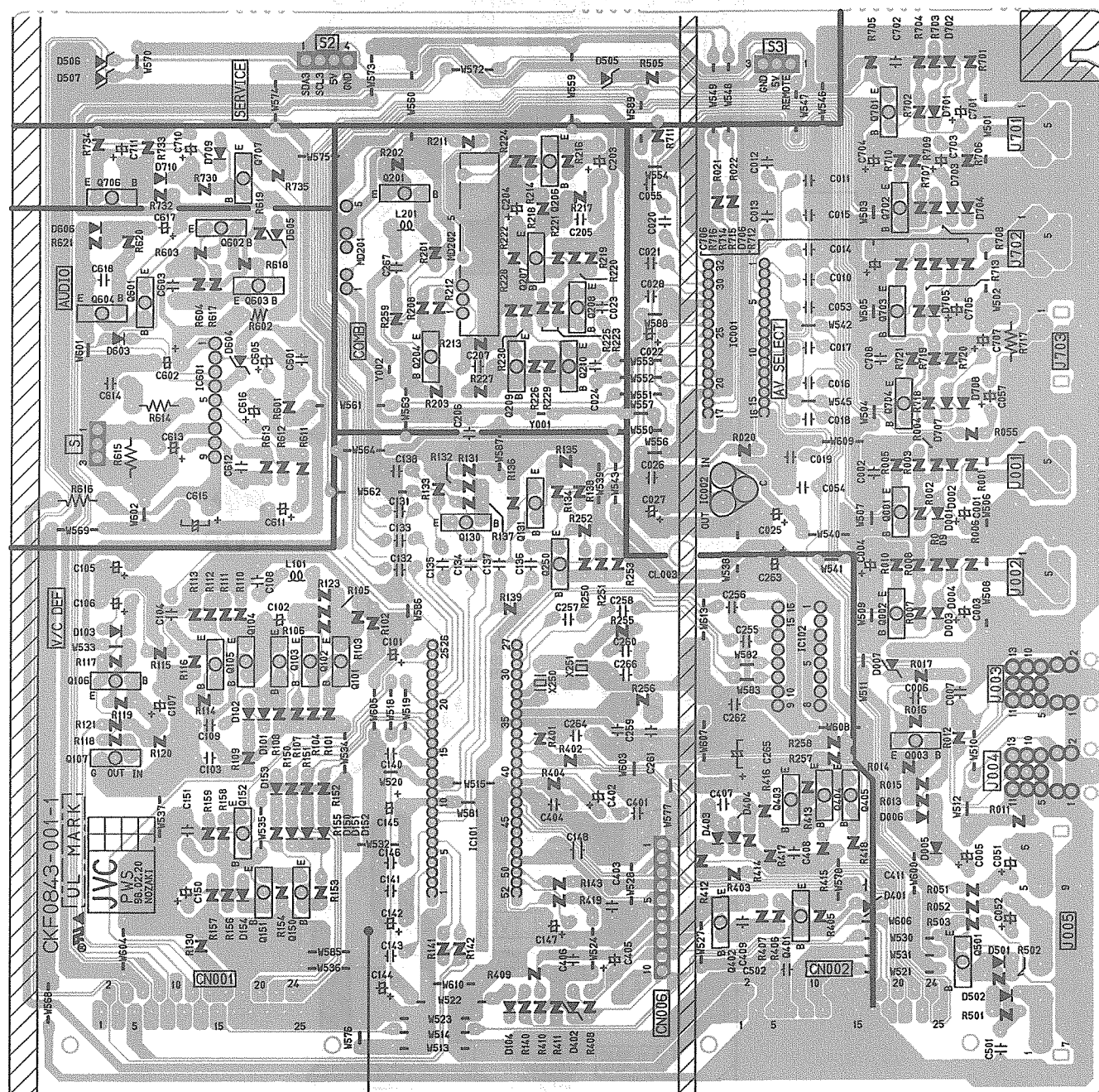
## MAIN PWB PATTERN







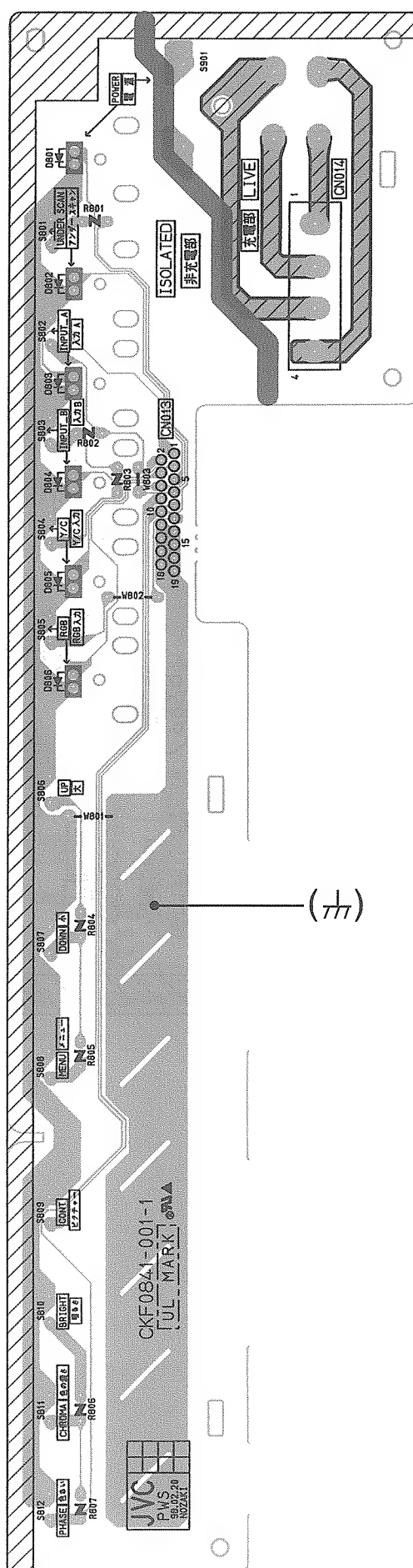



$$\left( \begin{array}{c} | \\ \hline \text{///} \end{array} \right)$$

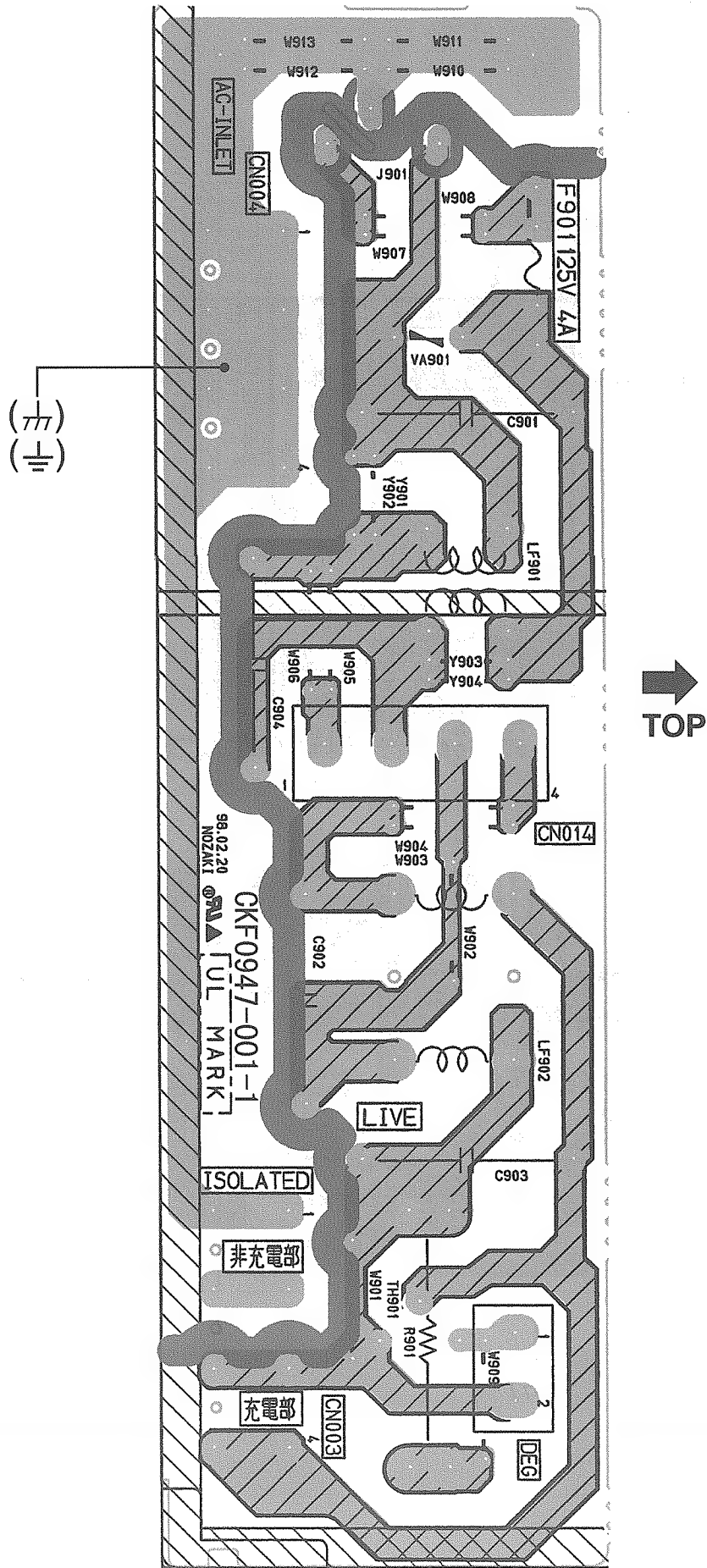




### FRONT PWB PATTERN

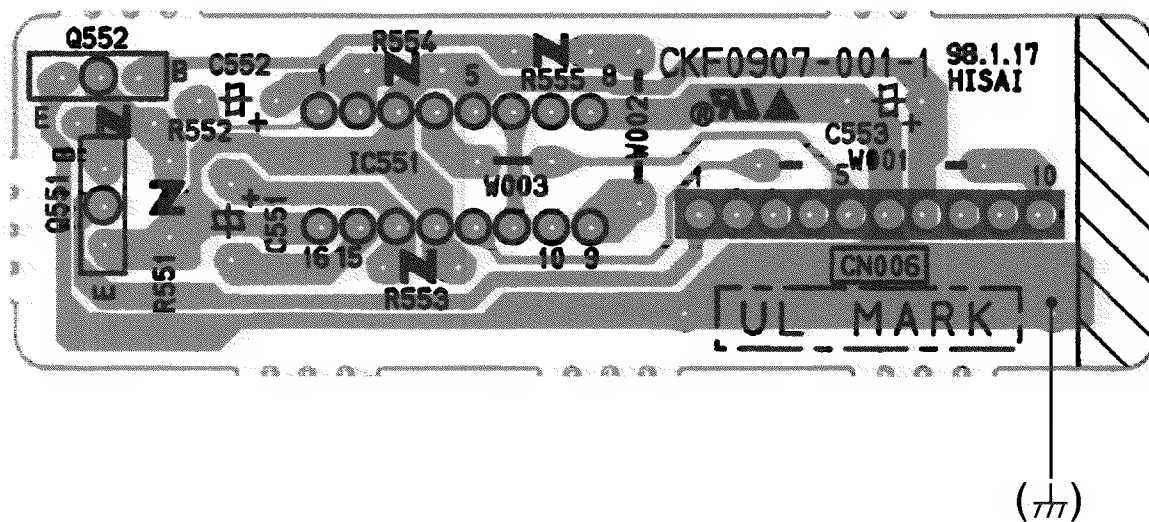


FILTER PWB PATTERN



RESET MODULE PWB PATTERN


←  
TOP





# PARTS LIST

## CAUTION

- The parts identified by the  symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines — in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

## ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

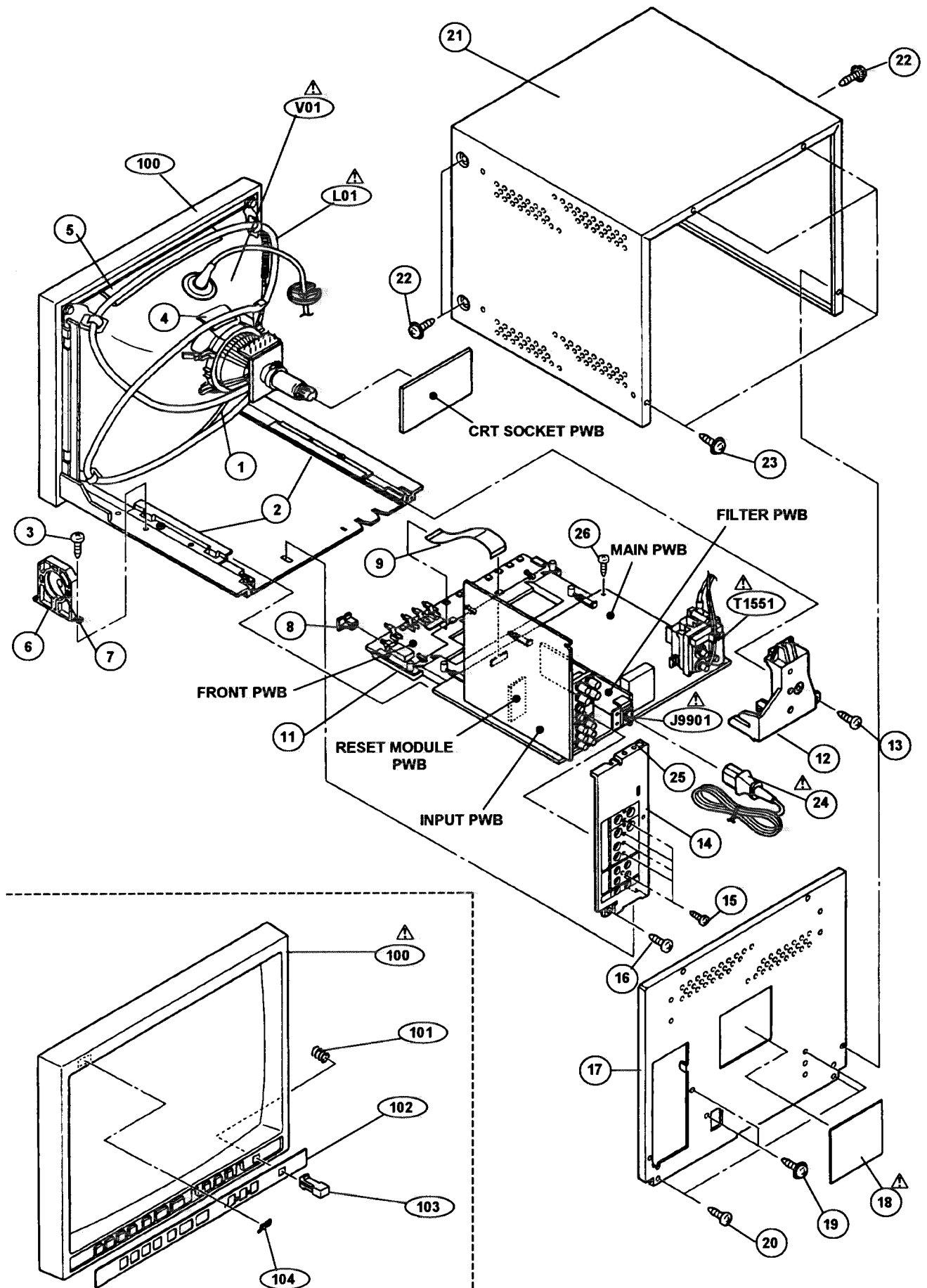
## CONTENTS

■ USING P.W. BOARD .....	32
■ EXPLODED VIEW PARTS LIST .....	32
■ EXPLODED VIEW .....	33
■ PRINTED WIRING BOARD PARTS LIST	
● MAIN PW BOARD ASS'Y .....	34
● CRT SOCKET PW BOARD ASS'Y .....	36
● FRONT PW BOARD ASS'Y .....	36
● INPUT PW BOARD ASS'Y .....	37
● FILTER PW BOARD ASS'Y .....	39
● RESET MODULE PW BOARD ASS'Y .....	39
■ PACKING .....	40
■ PACKING PARTS LIST .....	40

## EXPLODED VIEW PARTS LIST

△ Ref. No.	Part No.	Part Name	Description	Local
△ V01	M41EEM311X360	PICTURE TUBE (ITC)	(Within DY, PC)	
△ L01	QQW0005-001	DEGAUSSING COIL		
△ T1551	QQH0009-001	FBT	(Within MAIN PWB)	
△ J9901	QMCB006-C01	AC INLET	(Within FILTER PWB)	
1	CHGB0015-0G-N	BRAIDED ASSY		
2	CM36537-A01	GUIDE RAIL	(× 2)	
3	SBSF4012Z	TAPPING SCREW		
4	CM42321-008	SPONGE		
5	CM48296-001	PROTECTOR		
6	CM23137-B01	SPEAKER HOLDER		
7	CEBSS08P-01KJ2	SPEAKER		
8	CM48241-001	KNOB CAP		
9	CHFB119-14BD-N	FFC WIRE		
11	CM12883-C01	CONNECT BASE		
12	CM23099-C01-V0	FBT HOLDER		
13	SBSF4012Z	TAPPING SCREW		
14	CM23098-A01	TERMINAL BKT		
15	SBSB3010M	TAPPING SCREW	(× 5)	
16	SBSF4012Z	TAPPING SCREW		
17	CM12882-002-EK	REAR PANEL		
△ 18	CM22867-030 (R)	ROLL R LABEL		
19	CM44287-00C	ASSY SCREW	(× 2)	
20	SBSF4012Z	TAPPING SCREW	(× 3)	
21	CM12894-003-EK	TOP COVER		
22	CM44287-00C	ASSY SCREW	(× 4)	
23	CM44287-00C	ASSY SCREW	(× 4)	
△ 24	CM46843-001	CORD CLAMP		
△ 25	CM44141-B01	EARTH LABEL		
26	SBSB3010M	TAPPING SCREW		
100	CM12880-D01-EK	FRONT CABINET	Inc. No. 101~104	
101	CM46757-001	SPRING		
102	CM23102-004	CONTROL SHEET		
103	CM46756-A01	POWER KNOB		
104	CM48149-A01	JVC MARK		

# EXPLODED VIEW



## PRINTED WIRING BOARD PARTS LIST

## MAIN P.W. BOARD ASS'Y (FX-1102A)

Symbol No.	Part No.	Part Name	Description	Local
------------	----------	-----------	-------------	-------

## VARIABLE RESISTOR

R1952	QVP0053-102Z	V R (B1 ADJ)	1kΩ	
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## RESISTOR

R1402	QRA14CF-2201Y	MF R	2.2kΩ	1/4W F
R1403-04	QRE121J-1R2Y	C R	1.2Ω	1/2W J
R1405	QRG01GJ-101	OM R	100Ω	1W J
R1406	QRE121J-1R5Y	C R	1.5Ω	1/2W J
R1407	QRE141J-103Y	C R	10kΩ	1/4W J
R1409	QRE141J-390Y	C R	39Ω	1/4W J
R1461	QRE141J-303Y	C R	30kΩ	1/4W J
R1462	QRE141J-102Y	C R	1kΩ	1/4W J
R1463	QRG039J-180	OM R	18 Ω	3W J
R1464	QRE121J-562Y	C R	5.6kΩ	1/2W J
R1465	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1466	QRG039J-150	OM R	15 Ω	3W J
R1467	QRE121J-562Y	C R	5.6kΩ	1/2W J
R1503	QRE141J-563Y	C R	56kΩ	1/4W J
R1505	QRE141J-123Y	C R	12kΩ	1/4W J
R1506	QRE121J-152Y	C R	1.5kΩ	1/2W J
R1507-08	QRG029J-121	OM R	120 Ω	2W J
R1521	QRE121J-181Y	C R	180Ω	1/2W J
R1522	QRG029J-103	OM R	10kΩ	2W J
R1526	QRG029J-102	OM R	1kΩ	2W J
R1556	QRL029J-220	OM R	22Ω	2W J
R1557	QRE141J-333Y	C R	33kΩ	1/4W J
R1558	QRE141J-393Y	C R	39kΩ	1/4W J
R1559	QRE121J-472Y	C R	4.7kΩ	1/2W J
R1571	QRE141J-332Y	C R	3.3kΩ	1/4W J
R1572	QRA14CF-1692Y	MF R	16.9kΩ	1/4W F
R1573	QRA14CF-4991Y	MF R	4.99kΩ	1/4W F
R1574-75	QRE141J-102Y	C R	1kΩ	1/4W J
R1576-77	QRE141J-103Y	C R	10kΩ	1/4W J
R1701-03	QRE141J-681Y	C R	680Ω	1/4W J
R1706-08	QRE141J-103Y	C R	10kΩ	1/4W J
R1711-15	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1716-21	QRE141J-103Y	C R	10kΩ	1/4W J
R1722-23	QRE141J-682Y	C R	6.8kΩ	1/4W J
R1725	QRE141J-122Y	C R	1.2kΩ	1/4W J
R1726	QRE141J-182Y	C R	1.8kΩ	1/4W J
R1728	QRE141J-102Y	C R	1kΩ	1/4W J
R1729	QRE141J-333Y	C R	33kΩ	1/4W J
R1730	QRE141J-222Y	C R	2.2kΩ	1/4W J
R1731	QRE141J-103Y	C R	10kΩ	1/4W J
R1732	QRE141J-102Y	C R	1kΩ	1/4W J
R1734-35	QRE141J-122Y	C R	1.2kΩ	1/4W J
R1737	QRE141J-560Y	C R	56Ω	1/4W J
R1738	QRE141J-101Y	C R	100Ω	1/4W J
R1739	QRE141J-560Y	C R	56Ω	1/4W J
R1740	QRE141J-101Y	C R	100Ω	1/4W J
R1741	QRE141J-560Y	C R	56Ω	1/4W J
R1742	QRE141J-101Y	C R	100Ω	1/4W J
R1743	QRE141J-223Y	C R	22kΩ	1/4W J
R1744	QRE141J-562Y	C R	5.6kΩ	1/4W J
R1745	QRE141J-102Y	C R	1kΩ	1/4W J
R1746	QRE141J-103Y	C R	10kΩ	1/4W J
R1747	QRE141J-563Y	C R	56kΩ	1/4W J
R1748	QRE141J-223Y	C R	22kΩ	1/4W J
R1749	QRE141J-823Y	C R	82kΩ	1/4W J
R1750-51	QRE141J-103Y	C R	10kΩ	1/4W J
R1752	QRE141J-103Y	C R	10kΩ	1/4W J
R1753	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1754	QRE141J-101Y	C R	100Ω	1/4W J
R1755	QRE141J-152Y	C R	1.5kΩ	1/4W J
R1756	QRE141J-102Y	C R	1kΩ	1/4W J
R1757	QRE141J-822Y	C R	8.2kΩ	1/4W J
R1758	QRE141J-391Y	C R	390Ω	1/4W J
R1759-60	QRE141J-103Y	C R	10kΩ	1/4W J
R1761	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1762	QRE141J-101Y	C R	100Ω	1/4W J

Symbol No.	Part No.	Part Name	Description	Local
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## RESISTOR

R1763	QRE141J-152Y	C R	1.5kΩ	1/4W J
R1764	QRE141J-102Y	C R	1kΩ	1/4W J
R1765	QRE141J-822Y	C R	8.2kΩ	1/4W J
R1766	QRE141J-391Y	C R	390Ω	1/4W J
R1767-68	QRE141J-103Y	C R	10kΩ	1/4W J
R1769	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1770	QRE141J-101Y	C R	100Ω	1/4W J
R1771	QRE141J-152Y	C R	1.5kΩ	1/4W J
R1772	QRE141J-102Y	C R	1kΩ	1/4W J
R1773	QRE141J-822Y	C R	8.2kΩ	1/4W J
R1774	QRE141J-391Y	C R	390Ω	1/4W J
R1775	QRE141J-103Y	C R	10kΩ	1/4W J
R1776	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1777	QRE141J-103Y	C R	10kΩ	1/4W J
R1778	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1779-80	QRE141J-103Y	C R	10kΩ	1/4W J
R1782	QRE141J-472Y	C R	4.7kΩ	1/4W J
R1784	QRE141J-103Y	C R	10kΩ	1/4W J
R1786	QRE141J-681Y	C R	680Ω	1/4W J
R1787-89	QRE141J-102Y	C R	1kΩ	1/4W J
R1791	QRE141J-470Y	C R	47Ω	1/4W J
R1792	QRE141J-103Y	C R	10kΩ	1/4W J
R1793	QRE141J-102Y	C R	1kΩ	1/4W J
R1794	QRE141J-103Y	C R	10kΩ	1/4W J
R1902	QRF154K-4R7	UNF R	4.7 Ω	15W K
R1931	QRG039J-333	OM R	33kΩ	3W J
R1932	QRL029J-473	OM R	47kΩ	2W J
R1933	QRG039J-333	OM R	33kΩ	3W J
R1937	QRE141J-102Y	C R	1kΩ	1/4W J
R1938	QRE141J-182Y	C R	1.8kΩ	1/4W J
R1939	QRJ146J-101X	C R	100Ω	1/4W J
R1940	QRJ146J-392X	C R	3.9kΩ	1/4W J
R1943	QRG01GJ-150	OM R	15Ω	1W J
R1944	QRT029J-2R7	MF R	2.7Ω	2W J
R1945	QRM059J-R33	MP R	0.33 Ω	5W J
R1947	QRJ146J-102X	C R	1kΩ	1/4W J
R1948	QRE141J-273Y	C R	27kΩ	1/4W J
R1949	QRE141J-154Y	C R	150kΩ	1/4W J
R1950-51	QRA14CF-1502Y	MF R	15kΩ	1/4W F
R1954	QRA14CF-4701Y	MF R	4.7kΩ	1/4W F
R1955	QRT029J-R82	MF R	0.82Ω	2W J
R1956	QRT029J-1R0	MF R	1.0Ω	2W J
R1958	QRE141J-272Y	C R	2.7kΩ	1/4W J
R1959	QRE141J-183Y	C R	18kΩ	1/4W J
R1960	QRE141J-562Y	C R	5.6kΩ	1/4W J
R1961	QRE121J-1R8Y	C R	1.8Ω	1/2W J
R1971	QRG039J-152	OM R	1.5kΩ	3W J

## CAPACITOR

C1402	QCS31HJ-180Z	C CAP.	18pF	50V J
C1406	QFLC2AK-563Z	M CAP.	0.056μF	100V K
C1407	QFLC2AJ-103Z	M CAP.	0.01μF	100V J
C1408	QFV71HJ-474Z	MF CAP.	0.47μF	50V J
C1409	QFLC2AK-393Z	M CAP.	0.039μF	100V K
C1411	QFLC2AJ-103Z	M CAP.	0.01μF	100V J
C1412	QCB31HK-103Z	C CAP.	0.01μF	50V K
C1413	QCB31HK-272Z	C CAP.	2700pF	50V K
C1414	QFV71HJ-474Z	MF CAP.	0.47μF	50V J
C1415	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C1416	QCS31HJ-221Z	C CAP.	220pF	50V J
C1417	QCS31HJ-390Z	C CAP.	39pF	50V J
C1462	QEM61HK-475Z	E CAP.	4.7μF	50V K
C1464	QCB31HK-152Z	C CAP.	1500pF	50V K
C1502	QCB32HK-681Z	C CAP.	680pF	500V K
C1503	QEH2AM-225Z	E CAP.	2.2μF	100V M
C1520	QFZ0119-904	M.P.P. CAPACITOR	0.09μF	200V ±3%
C1521	QFZ0117-1001	M.P.P. CAPACITOR	1000pF	1.4kVH±2.5%
C1522	QFZ0117-1202	M.P.P. CAPACITOR	0.012μF	1.4kVH±2.5%



△ Symbol No.	Part No.	Part Name	Description	Local
<b>CAPACITOR</b>				
C1523	QFP32GJ-273	PP CAP.	0.027μF 400V J	
C1524	QFZ0119-155	M.PP CAPACITOR	1.5μF 200V ±3%	
C1525	QETC2CM-475Z	E CAP.	4.7μF 160V M	
C1527	QEH82AM-477	E CAP.	470μF 100V M	
C1528	QFZ0117-6001	M.PP CAPACITOR	6000pF1.4kVH±2.5%	
C1555	QEH82CM-107	E CAP.	100μF 160V M	
C1556	QETM1CM-478	E CAP.	4700μF 16V M	
C1557	QEH1CM-107Z	E CAP.	100μF 63V M	
C1558	QETN1CM-108Z	E CAP.	1000μF 16V M	
C1559	QETN1CM-477Z	E CAP.	470μF 16V M	
C1560	QEH1CM-227Z	E CAP.	220μF 50V M	
C1562	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C1563	QEH2CM-225Z	E CAP.	2.2μF 100V M	
C1571	QCB31HK-682Z	C CAP.	6800pF 50V K	
C1572	QETM2AM-106Z	E CAP.	10μF 100V M	
C1573	QETN1HM-105Z	E CAP.	1μF 50V M	
C1574-75	QEH1EM-107Z	E CAP.	100μF 25V M	
C1701	QETN1EM-227Z	E CAP.	220μF 25V M	
C1702	QFLC1HJ-104Z	M CAP.	0.1μF 50V J	
C1703	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C1704	QETN1AM-227Z	E CAP.	220μF 10V M	
C1705	QFLC1HJ-104Z	M CAP.	0.1μF 50V J	
C1706	QDC31HJ-560Z	C CAP.	56pF 50V J	
C1707	QDC31HJ-680Z	C CAP.	68pF 50V J	
C1708	QENC1EM-106Z	BP E CAP.	10μF 25V M	
C1709	QETN1AM-107Z	E CAP.	100μF 10V M	
C1710	QCS31HJ-221Z	C CAP.	220pF 50V J	
C1711	QCS31HJ-181Z	C CAP.	180pF 50V J	
C1712	QCS31HJ-271Z	C CAP.	270pF 50V J	
C1713	QCB31HK-102Z	C CAP.	1000pF 50V K	
C1714	QCS31HJ-271Z	C CAP.	270pF 50V J	
C1715	QETN1HM-336Z	E CAP.	33μF 50V M	
C1716	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
C1717	QETN1HM-336Z	E CAP.	33μF 50V M	
C1718	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
C1719	QETN1HM-336Z	E CAP.	33μF 50V M	
C1720	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
C1721	QETN1HM-225Z	E CAP.	2.2μF 50V M	
C1722	QETN1HM-106Z	E CAP.	10μF 50V M	
C1723	QETN1CM-107Z	E CAP.	100μF 16V M	
△ C1724-26	QCS31HJ-390Z	C CAP.	39pF 50V J	
△ C1901	QCZ9079-471	C CAP.	470pFAC400V K	
△ C1902	QCZ9079-471	C CAP.	470pFAC400V K	
△ C1903	QCZ9086-472	C CAP.	4700pFAC400V P	
△ C1904	QCZ9086-472	C CAP.	4700pFAC400V P	
△ C1905	QCZ9086-472	C CAP.	4700pFAC400V P	
C1911	QEZ0371-397	E CAP.	390μF 400V M	
C1931	QCB32HK-472Z	C CAP.	4700pF 500V K	
C1932	QCZ0122-561	C CAP.	560pF 2000V K	
C1933	QCZ0325-151	C CAP.	150pF 2000V K	
C1934	QCZ0325-102	C CAP.	1000pF 2000V K	
C1935	QCB32HK-472Z	C CAP.	4700pF 500V K	
C1936	QCB32HK-471Z	C CAP.	470pF 500V K	
C1938	QETN1EM-477Z	E CAP.	470μF 25V M	
C1939	QCB31HK-152Z	C CAP.	1500pF 50V K	
C1940	QETN1CM-227Z	E CAP.	220μF 16V M	
C1941	QCS31HJ-391Z	C CAP.	390pF 50V J	
C1942	QETN1AM-107Z	E CAP.	100μF 10V M	
C1943	QETN1HM-105Z	E CAP.	1μF 50V M	
C1971	QCB32HK-152Z	C CAP.	1500pF 500V K	
C1975-76	QEH82AM-227	E CAP.	220μF 100V M	
C1977	QETM1CM-228	E CAP.	2200μF 16V M	
C1978	QETN1EM-108Z	E CAP.	1000μF 25V M	
C1983	QEM61EK-225Z	E CAP.	2.2μF 25V K	
C1984	QETN1CM-107Z	E CAP.	100μF 16V M	
△ C1985	QFLC2AK-102Z	M CAP.	1000pF 100V K	
△ C1991	QCZ9079-222	C CAP.	2200pFAC400V M	

**TRANSFORMER**

△ T1501	CE42034-001	H.DRIVE TRANSF.
△ T1551	QQH0009-001	FBT

△ Symbol No.	Part No.	Part Name	Description	Local
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**TRANSFORMER**

△ T1901	CETS075-001	SWITCH TRANSF.
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**COIL**

L1401	QQL2018-240	COIL	24μH	
L1461	QQL43AK-271	COIL	270μH	K
L1521	CE40970-00A	LINEARITY COIL		
L1551	QQL2018-480	HEATER CHOKE		
L1701	QQL01BK-4R7Z	COIL	4.7μH	K
L1702	QQL01BK-8R2Z	COIL	8.2μH	K
L1971-72	QQL26AK-560Z	COIL	56μH	K

**DIODE**

D1401	1SS120-T2	SI DIODE
D1402	MTZ133B-T2	ZENER DIODE
D1403	MTZ124B-T2	ZENER DIODE
D1404	1SS133-T2	SI DIODE
D1405	RD62E/B-T2	ZENER DIODE
D1407	MTZ118A-T2	ZENER DIODE
D1461	MTZ133B-T2	ZENER DIODE
D1521	RH3G-F1	SI DIODE
D1522	RU30-F1	SI DIODE
D1523	BYD33G-T3	SI DIODE
D1524	1SS133-T2	SI DIODE
D1550-51	BYD33G-T3	SI DIODE
D1552	RU30-F1	SI DIODE
D1553	BYD33G-T3	SI DIODE
D1555	MTZ115B-T2	ZENER DIODE
D1562	1SS244-T2	SI DIODE
D1563	BYD33G-T3	SI DIODE
D1571	1SS133-T2	SI DIODE
D1572	MTZ16.8C-T2	ZENER DIODE
D1574	1SS133-T2	SI DIODE
D1575	1SS244-T2	SI DIODE
D1576	1SS133-T2	SI DIODE
D1577	1SS244-T2	SI DIODE
D1701	1SS133-T2	SI DIODE
D1702-03	MA700A-T2	SI DIODE
D1704-05	1SS133-T2	SI DIODE
D1707-08	1SS133-T2	SI DIODE
D1709	MTZ16.2B-T2	ZENER DIODE
△ D1710-11	1SS133-T2	SI DIODE
△ D1901	D3SBA60	DIODE BRIDGE
D1931	RU1C-LFC4	SI DIODE
D1934	RGP10J-S025-T3	SI DIODE
D1935	1SS133-T2	SI DIODE
D1936	MTZ112C-T2	ZENER DIODE
D1938	EG1Z-T3	SI DIODE
D1939	1SS133-T2	SI DIODE
D1940	MA4068N/Z1/-T2	ZENER DIODE
D1941	MTZ17.5S-T2	ZENER DIODE
D1971-72	RU30-F1	SI DIODE
D1973-74	RU3YX-LFC4	SI DIODE
D1975	RGP10J-S025-T3	SI DIODE
D1976	1SS133-T2	SI DIODE
D1977	MTZ110B-T2	ZENER DIODE

**TRANSISTOR**

Q1461	2SB941A/QP/	SI TRANSISTOR	
Q1501	BSN274	F.E.T.	
△ Q1521	2SD2553-LB	SI TRANSISTOR	H.OUT
Q1571	2SC3311A/QR/-T	SI TRANSISTOR	
Q1572	2SD1853-T	SI TRANSISTOR	
Q1701-03	DTA124ESA-T	DIGI. TRANSISTOR	
Q1706	2SC3311A/QR/-T	SI TRANSISTOR	
Q1707	DTA124ESA-T	DIGI. TRANSISTOR	
Q1708-09	2SA1309A/QR/-T	SI TRANSISTOR	
Q1711-13	2SC3311A/QR/-T	SI TRANSISTOR	
Q1714-15	DTC124ESA-T	DIGI. TRANSISTOR	
Q1716	2SC3311A/QR/-T	SI TRANSISTOR	
Q1717	2SA1309A/QR/-T	SI TRANSISTOR	

△ Symbol No.	Part No.	Part Name	Description	Local
Q1718	2SC3311A/QR/-T	SI. TRANSISTOR		
Q1719	2SA1309A/QR/-T	SI. TRANSISTOR		
Q1720	2SC3311A/QR/-T	SI. TRANSISTOR		
Q1721	2SA1309A/QR/-T	SI. TRANSISTOR		
Q1723	2SA1309A/QR/-T	SI. TRANSISTOR		
Q1724	2SK301/Q/-T	F. E. T.		
Q1725	DTA124ESA-T	DIGI. TRANSISTOR		
Q1726	DTC124ESA-T	DIGI. TRANSISTOR		
Q1727-29	2SC3311A/QR/-T	SI. TRANSISTOR		
Q1732	2SC3311A/QR/-T	SI. TRANSISTOR		
Q1932	2SA949/Y/Z1	SI. TRANSISTOR		
Q1933	2SC1959/Y/-T	SI. TRANSISTOR		

<b>IC</b>				
IC1401	TDA8350Q/NS	I. C. (MONO-ANA)		
IC1551	LM2940CT-12	I. C. (MONO-ANA)		
IC1701	M37212M6-108SP	I. C. (MICRO-COMP)		
IC1702	L78LR05E-MA	I. C. (MONO-ANA)		
IC1703	AT24C08-1700PN	I. C.	(SERVICE)	
△ IC1931	STR-S6707	I. C. (HYBRID)		
△ IC1932	TLF721F (D4-GR)	I. C. (PH. COUPLER)		
IC1972	KIA7808P1	I. C. (MONO-ANA)		

<b>OTHERS</b>				
CN1001-02	CHB303W-25R-J	25P DIN M CONNEC		
△ CN1003	CHB801N-04P-J	GTS CONNECTOR		
△ CN1004	CHB801N-04P-J	GTS CONNECTOR		
CN1013	CHC108N-19T-A	FFC CONNECTOR		
△ CP1974	ICP-N10-Y	I. C. PROTECT		
△ CP1975	ICP-N5-Y	I. C. PROTECT		
△ FR1552	QRZ9024-R82	FUSI. RESISTOR	0.82 Ω 2W K	
△ FR1553	QRZ9011-100	FUSI. RESISTOR	10 Ω 1/2W J	
△ FR1554	QRZ9017-4R7	FUSI. RESISTOR	4.7 Ω 1/4W J	
△ FR1582	QRZ9011-4R7	FUSI. RESISTOR	4.7 Ω 1/2W J	
△ FR1973	QRZ9021-8R2	FUSI. RESISTOR	8.2 Ω 1W J	
△ FR1974	QRZ9013-R56	FUSI. RESISTOR	0.56 Ω 1/2W K	
K1401-02	CE41433-001Z	BEADS CORE		
K1701-02	CE41433-001Z	BEADS CORE		
K1931	CE42050-001Z	CORE		
K1972	CE41433-001Z	BEADS CORE		
K1973	CE42050-001Z	CORE		
X1701	CST8.00MTW	CER. RESONATOR		

## FRONT P.W. BOARD ASS'Y (FX-4051A)

△ Symbol No.	Part No.	Part Name	Description	Local
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## RESISTOR

R4802	QRE141J-332Y	C R	3.3kΩ 1/4W J	
R4803-04	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R4805	QRE141J-332Y	C R	3.3kΩ 1/4W J	
R4806	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R4807	QRE141J-332Y	C R	3.3kΩ 1/4W J	

## DIODE

D4801	GL2EG6	L. E. D. (GRN)		
D4803-05	GL2EG6	L. E. D. (GRN)		

## OTHERS

CN4013	CM46978-A01-H	L. E. D. HOLDER		
S4802	QSP1A11-C18Z	PUSH SWITCH	(INPUT-A)	
S4803	QSP1A11-C18Z	PUSH SWITCH	(INPUT-B)	
S4804	QSP1A11-C18Z	PUSH SWITCH	(Y/C)	
S4806	QSP1A11-C18Z	PUSH SWITCH	(UP)	
S4807	QSP1A11-C18Z	PUSH SWITCH	(DOWN)	
S4808	QSP1A11-C18Z	PUSH SWITCH	(MENU)	
S4809	QSP1A11-C18Z	PUSH SWITCH	(CONT)	
S4810	QSP1A11-C18Z	PUSH SWITCH	(BRIGHT)	
S4811	QSP1A11-C18Z	PUSH SWITCH	(CHROMA)	
S4812	QSP1A11-C18Z	PUSH SWITCH	(PHASE)	
△ S4901	QSP4K21-C01	PUSH SWITCH	(POWER)	

## CRT SOCKET P.W. BOARD ASS'Y (FX-3053A)

△ Symbol No.	Part No.	Part Name	Description	Local
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## RESISTOR

R3302-04	QRE141J-101Y	C R	100Ω 1/4W J	
R3305	QRC121K-102Z	COMP. R	1kΩ 1/2W K	
R3306-07	QRL029J-153	OM R	15kΩ 2W J	
R3308	QRC121K-102Z	COMP. R	1kΩ 1/2W K	
R3309-10	QRL029J-153	OM R	15kΩ 2W J	
R3311	QRC121K-102Z	COMP. R	1kΩ 1/2W K	
R3312-13	QRL029J-153	OM R	15kΩ 2W J	
R3314	QRE141J-474Y	C R	470kΩ 1/4W J	
R3315	QRC121K-105Z	COMP. R	1MΩ 1/2W K	
R3316	QRC121K-102Z	COMP. R	1kΩ 1/2W K	
R3317	QRC121K-474Z	COMP. R	470kΩ 1/2W K	

## CAPACITOR

C3301	QETN1CM-107Z	E CAP.	100μF 16V M	
C3303	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
C3305	QETM2EM-336	E CAP.	33μF 250V M	
C3306	QETM2EM-105Z	E CAP.	1μF 250V M	
C3307	QCZ0121-102	C CAP.	1000pF 3000V Z	

## COIL

L3302	QQL01BK-101Z	COIL	100μH K	
L3304	QQL01BK-101Z	COIL	100μH K	
L3306	QQL01BK-101Z	COIL	100μH K	

## DIODE

D3301	RGP10J-5025-T3	SI. DIODE		
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## TRANSISTOR

Q3301-03	2SC4544-LB	SI. TRANSISTOR		
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## OTHERS

△ SK3001	CE42554-001	C. R. T. SOCKET		
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## INPUT P.W. BOARD ASS'Y (FX-6058A)

△ Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R6001	QRE141J-750Y	C R	75Ω 1/4W J	
R6002	QRE141J-101Y	C R	100Ω 1/4W J	
R6003	QRE141J-273Y	C R	27kΩ 1/4W J	
R6004	QRE141J-563Y	C R	56kΩ 1/4W J	
R6005	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6006	QRE141J-750Y	C R	75Ω 1/4W J	
R6007	QRE141J-101Y	C R	100Ω 1/4W J	
R6008	QRE141J-273Y	C R	27kΩ 1/4W J	
R6009	QRE141J-563Y	C R	56kΩ 1/4W J	
R6010	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6011-12	QRE141J-750Y	C R	75Ω 1/4W J	
R6013	QRE141J-101Y	C R	100Ω 1/4W J	
R6014	QRE141J-273Y	C R	27kΩ 1/4W J	
R6015	QRE141J-563Y	C R	56kΩ 1/4W J	
R6016	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6017	QRE141J-101Y	C R	100Ω 1/4W J	
R6020	QRE141J-104Y	C R	100kΩ 1/4W J	
R6021-22	QRE141J-101Y	C R	100Ω 1/4W J	
R6051-52	QRE141J-822Y	C R	8.2kΩ 1/4W J	
R6101	QRE141J-223Y	C R	22kΩ 1/4W J	
R6102	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6103	QRE141J-181Y	C R	180Ω 1/4W J	
R6104	QRE141J-271Y	C R	270Ω 1/4W J	
R6105	QRE141J-821Y	C R	820Ω 1/4W J	
R6107	QRE141J-820Y	C R	82Ω 1/4W J	
R6108	QRE141J-103Y	C R	10kΩ 1/4W J	
R6109	QRE141J-821Y	C R	820Ω 1/4W J	
R6110	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6111	QRE141J-391Y	C R	390Ω 1/4W J	
R6112	QRE141J-682Y	C R	6.8kΩ 1/4W J	
R6113	QRE141J-332Y	C R	3.3kΩ 1/4W J	
R6114	QRE141J-682Y	C R	6.8kΩ 1/4W J	
R6116	QRE141J-102Y	C R	1kΩ 1/4W J	
R6117	QRE141J-334Y	C R	330kΩ 1/4W J	
R6118	QRE141J-391Y	C R	390Ω 1/4W J	
R6119	QRE141J-153Y	C R	15kΩ 1/4W J	
R6120	QRE141J-123Y	C R	12kΩ 1/4W J	
R6121	QRE141J-333Y	C R	33kΩ 1/4W J	
R6123	QRE141J-221Y	C R	220Ω 1/4W J	
R6131	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6132	QRE141J-222Y	C R	2.2kΩ 1/4W J	
R6133	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6134	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6135	QRE141J-222Y	C R	2.2kΩ 1/4W J	
R6136	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6137	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6138	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6140	QRE141J-103Y	C R	10kΩ 1/4W J	
R6141-42	QRE141J-101Y	C R	100Ω 1/4W J	
R6143	QRA14CF-3902Y	MF R	39kΩ 1/4W F	
R6150-52	QRE141J-101Y	C R	100Ω 1/4W J	
R6154	QRE141J-392Y	C R	3.9kΩ 1/4W J	
R6155	QRE141J-102Y	C R	1kΩ 1/4W J	
R6156	QRE141J-392Y	C R	3.9kΩ 1/4W J	
R6157	QRE141J-182Y	C R	1.8kΩ 1/4W J	
R6158	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6201-02	QRE141J-102Y	C R	1kΩ 1/4W J	
R6203	QRE141J-101Y	C R	100Ω 1/4W J	
R6208	QRE141J-392Y	C R	3.9kΩ 1/4W J	
R6211-13	QRE141J-102Y	C R	1kΩ 1/4W J	
R6214	QRE141J-101Y	C R	100Ω 1/4W J	
R6216	QRE141J-472Y	C R	4.7kΩ 1/4W J	
R6217	QRE141J-561Y	C R	560Ω 1/4W J	
R6218	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6219	QRE141J-152Y	C R	1.5kΩ 1/4W J	
R6220	QRE141J-223Y	C R	22kΩ 1/4W J	
R6221	QRE141J-183Y	C R	18kΩ 1/4W J	
R6222	QRE141J-103Y	C R	10kΩ 1/4W J	
R6223	QRE141J-101Y	C R	100Ω 1/4W J	
R6224-25	QRE141J-102Y	C R	1kΩ 1/4W J	
R6226	QRE141J-473Y	C R	47kΩ 1/4W J	
R6227	QRE141J-103Y	C R	10kΩ 1/4W J	

△ Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R6228	QRE141J-152Y	C R	1.5kΩ 1/4W J	
R6229-30	QRE141J-392Y	C R	3.9kΩ 1/4W J	
R6250	QRE141J-222Y	C R	2.2kΩ 1/4W J	
R6251	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6252	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6253	QRE141J-222Y	C R	2.2kΩ 1/4W J	
R6255	QRE141J-151Y	C R	150Ω 1/4W J	
R6256	QRE141J-104Y	C R	100kΩ 1/4W J	
R6257	QRE141J-103Y	C R	10kΩ 1/4W J	
R6259	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6401	QRE141J-822Y	C R	8.2kΩ 1/4W J	
R6402	QRE141J-152Y	C R	1.5kΩ 1/4W J	
R6403	QRE141J-103Y	C R	10kΩ 1/4W J	
R6404	QRE141J-153Y	C R	15kΩ 1/4W J	
R6405	QRE141J-103Y	C R	10kΩ 1/4W J	
R6406-07	QRE141J-223Y	C R	22kΩ 1/4W J	
R6408	QRE141J-821Y	C R	820Ω 1/4W J	
R6409	QRE141J-153Y	C R	15kΩ 1/4W J	
R6410	QRE141J-473Y	C R	47kΩ 1/4W J	
R6411	QRE141J-105Y	C R	1MΩ 1/4W J	
R6412	QRE141J-103Y	C R	10kΩ 1/4W J	
R6413	QRE141J-332Y	C R	3.3kΩ 1/4W J	
R6414	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6415	QRE141J-102Y	C R	1kΩ 1/4W J	
R6416	QRE141J-272Y	C R	2.7kΩ 1/4W J	
R6417	QRE141J-152Y	C R	1.5kΩ 1/4W J	
R6418	QRE141J-472Y	C R	4.7kΩ 1/4W J	
R6419	QRE141J-473Y	C R	47kΩ 1/4W J	
R6501-02	QRE141J-102Y	C R	1kΩ 1/4W J	
R6503	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6505	QRE141J-101Y	C R	100Ω 1/4W J	
R6601	QRE141J-102Y	C R	1kΩ 1/4W J	
R6602	QRK126J-220X	C R	22Ω 1/2W J	
R6603	QRE141J-562Y	C R	5.6kΩ 1/4W J	
R6604	QRE141J-123Y	C R	12kΩ 1/4W J	
R6611	QRE141J-331Y	C R	330Ω 1/4W J	
R6612	QRE141J-103Y	C R	10kΩ 1/4W J	
R6613	QRE141J-822Y	C R	8.2kΩ 1/4W J	
R6614	QRE122J-4R7	C R	4.7Ω 1/2W J	
R6617	QRE141J-122Y	C R	1.2kΩ 1/4W J	
R6618	QRE141J-154Y	C R	150kΩ 1/4W J	
R6619	QRE141J-470Y	C R	47Ω 1/4W J	
R6620	QRE141J-223Y	C R	22kΩ 1/4W J	
R6621	QRE141J-563Y	C R	56kΩ 1/4W J	
R6705	QRE141J-223Y	C R	22kΩ 1/4W J	
R6710	QRE141J-223Y	C R	22kΩ 1/4W J	
R6716	QRE141J-223Y	C R	22kΩ 1/4W J	

## CAPACITOR

△ Symbol No.	Part No.	Part Name	Description	Local
C6001	QETN1HM-225Z	E CAP.	2.2μF 50V M	
C6002	QFLC1HJ-473Z	M CAP.	0.047μF 50V J	
C6003	QETN1HM-225Z	E CAP.	2.2μF 50V M	
C6004	QETN1CM-476Z	E CAP.	47μF 16V M	
C6005	QETN1HM-225Z	E CAP.	2.2μF 50V M	
C6006	QFLC1HJ-473Z	M CAP.	0.047μF 50V J	
C6007	QFLC1HJ-103Z	M CAP.	0.01μF 50V J	
C6010	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6011-15	QFLC1HJ-473Z	M CAP.	0.047μF 50V J	
C6016	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6017	QFLC1HJ-473Z	M CAP.	0.047μF 50V J	
C6018	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6019-21	QFLC1HJ-473Z	M CAP.	0.047μF 50V J	
C6022	QETC1CM-226Z	E CAP.	22μF 16V M	
C6023-24	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6025	QETN1CM-476Z	E CAP.	47μF 16V M	
C6026	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6027	QETN1CM-476Z	E CAP.	47μF 16V M	
C6028	QFV71HJ-124Z	MF CAP.	0.12μF 50V J	
C6051-52	QETN1HM-225Z	E CAP.	2.2μF 50V M	

Symbol No.	Part No.	Part Name	Description	Local
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## CAPACITOR

C6053-55	QCS31HJ-181Z	C CAP.	180pF	50V J
C6101	QETN1CM-107Z	E CAP.	100μF	16V M
C6102	QENC1HM-225Z	BP E CAP.	2.2μF	50V M
C6103	QFLC1HJ-473Z	M CAP.	0.047μF	50V J
C6104	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6105	QETN1CM-475Z	E CAP.	47μF	16V M
C6106	QETN1HM-106Z	E CAP.	10μF	50V M
C6108	QCS31HJ-390Z	C CAP.	39pF	50V J

C6109	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6134	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6136	QFLC1HJ-103Z	M CAP.	0.01μF	50V J
C6137-38	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6140-41	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6142	QETN1HM-105Z	E CAP.	1μF	50V M
C6143	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6144	QETN1HM-106Z	E CAP.	10μF	50V M

C6145	QEMS1CM-107	E CAP.	100μF	16V M
C6146	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6147	QETN1HM-225Z	E CAP.	2.2μF	50V M
C6148	QFZ0119-104	M. PP. CAPACITOR	0.1μF	200V ±3%
C6150	QETN1CM-476Z	E CAP.	47μF	16V M
C6151	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6203	QETN1CM-227Z	E CAP.	220μF	16V M
C6204	QETN1CM-476Z	E CAP.	47μF	16V M

C6205	QCS31HJ-390Z	C CAP.	39pF	50V J
C6206-07	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6255-56	QFLC1HJ-102Z	M CAP.	1000pF	50V J
C6257-58	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6259	QFLC1HJ-392Z	M CAP.	3900pF	50V J
C6260	QDC31HJ-470Z	C CAP.	47pF	50V J
C6261	QFLC1HJ-104Z	M CAP.	0.1μF	50V J
C6262	QFV71HJ-124Z	MF CAP.	0.12μF	50V J

C6263	QEMS1CM-107	E CAP.	100μF	16V M
C6264	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6265	QEMS1CM-477	E CAP.	470μF	16V M
C6266	QDC31HJ-180Z	C CAP.	18pF	50V J
C6267	QCS31HJ-120Z	C CAP.	12pF	50V J
C6401	QFLC1HJ-222Z	M CAP.	2200pF	50V J
C6402	QETN1HM-105Z	E CAP.	1μF	50V M
C6404	QFLC1HJ-472Z	M CAP.	4700pF	50V J

C6405	QETN1AM-227Z	E CAP.	220μF	10V M
C6407-08	QFLC1HJ-102Z	M CAP.	1000pF	50V J
C6409	QCS31HJ-391Z	C CAP.	390pF	50V J
C6411	QFLC1HJ-222Z	M CAP.	2200pF	50V J
C6501	QCS31HJ-101Z	C CAP.	100pF	50V J
C6502	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6601	QFLC1HJ-103Z	M CAP.	0.01μF	50V J
C6602	QETN1CM-108Z	E CAP.	1000μF	16V M

C6603	QFV71HJ-124Z	MF CAP.	0.12μF	50V J
C6605	QETN1HM-225Z	E CAP.	2.2μF	50V M
C6611	QETN1HM-106Z	E CAP.	10μF	50V M
C6612	QFLC1HJ-104Z	M CAP.	0.1μF	50V J
C6613	QETN1CM-227Z	E CAP.	220μF	16V M
C6614	QFLC1HJ-473Z	M CAP.	0.047μF	50V J
C6615	QETC1EM-108Z	E CAP.	1000μF	25V M
C6616	QETN1HM-475Z	E CAP.	4.7μF	50V M

C6617	QETN1CM-476Z	E CAP.	47μF	16V M
C6618	QFLC1HJ-103Z	M CAP.	0.01μF	50V J
C6702	QFLC1HJ-473Z	M CAP.	0.047μF	50V J
C6704	QETN1CM-476Z	E CAP.	47μF	16V M
C6706	QETN1CM-476Z	E CAP.	47μF	16V M
C6708	QFLC1HJ-473Z	M CAP.	0.047μF	50V J

## COIL

L6101	QQL01BK-150Z	COIL	15μH	K
L6201	QQL01BK-151Z	COIL	150μH	K

Symbol No.	Part No.	Part Name	Description	Local
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## DIODE

D6001-06	1SS133-T2	SI DIODE		
D6007	MTZJ9.1B-T2	ZENER DIODE		
D6101-04	1SS133-T2	SI DIODE		
D6150-53	1SS133-T2	SI DIODE		
D6401	MA4068N/Z1/-T2	ZENER DIODE		
D6402	MTZJ4.3A-T2	ZENER DIODE		
D6403-04	1SS133-T2	SI DIODE		
D6501-02	1SS133-T2	SI DIODE		
D6505-07	MTZJ5.1B-T2	ZENER DIODE		
D6603	1SS133-T2	SI DIODE		
D6605	MTZJ11A-T2	ZENER DIODE		
D6606	1SS133-T2	SI DIODE		

## TRANSISTOR

Q6001-03	2SC3311A/QR/-T	SI TRANSISTOR		
Q6101	2SC3311A/QR/-T	SI TRANSISTOR		
Q6102	2SA1309A/QR/-T	SI TRANSISTOR		
Q6103-06	2SC3311A/QR/-T	SI TRANSISTOR		
Q6107	DTC124ESA-T	DIGI. TRANSISTOR		
Q6130-31	2SC3311A/QR/-T	SI TRANSISTOR		
Q6150-51	2SC3311A/QR/-T	SI TRANSISTOR		
Q6152	2SA1309A/QR/-T	SI TRANSISTOR		

Q6201	2SA1309A/QR/-T	SI TRANSISTOR		
Q6204	2SC3311A/QR/-T	SI TRANSISTOR		
Q6206	2SA1309A/QR/-T	SI TRANSISTOR		
Q6207-10	2SC3311A/QR/-T	SI TRANSISTOR		
Q6250	2SC3311A/QR/-T	SI TRANSISTOR		
Q6401	2SC3311A/QR/-T	SI TRANSISTOR		
Q6402	2SA1309A/QR/-T	SI TRANSISTOR		
Q6403-05	2SC3311A/QR/-T	SI TRANSISTOR		

Q6501	2SA1309A/QR/-T	SI TRANSISTOR		
Q6601	2SC3311A/QR/-T	SI TRANSISTOR		
Q6602	2SA1309A/QR/-T	SI TRANSISTOR		
Q6603-04	2SC3311A/QR/-T	SI TRANSISTOR		

## IC

IC6001	MM1311BD	I.C. (MONO-ANA)		
IC6002	AN7809F	I.C. (MONO-ANA)		
IC6101	TDA8366/N4	I.C. (MONO-ANA)		
IC6102	TDA4665	I.C. (MONO-ANA)		
IC6601	AN5265	I.C. (MONO-ANA)		

## OTHERS

CN6001-02	CHB303W-25P-J	25P DIN M. CONNec		
CN6006	CH42151-010RT	RECEPTACLE		
J6001-02	CEMB021-002	BNC CONNECTOR		
J6004	QMD2B04-001	MINI CONNECTOR		
J6005	CEMN096-001	RCA JACK-BLOCK		
MD6201	QAX0407-001	COMB. FILTER		
MD6202	CE42464-001	BPF&DL MODULE		
X6250	CE41115-001Z	CRYSTAL		
X6251	CE41651-001Z	CRYSTAL		

**FILTER P.W. BOARD ASS'Y (FX-9060A)**

Symbol No.	Part No.	Part Name	Description	Local
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**RESISTOR**

R9901	QRF154J-680	UNF R	68 Ω	15W J
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**CAPACITOR**

C9901	QFZ9036-104	M.F. CAPACITOR	0.1μFAC250V	M
C9902	QFZ9036-104	M.F. CAPACITOR	0.1μFAC250V	M
C9903	QFZ9036-104	M.F. CAPACITOR	0.1μFAC250V	M

**TRANSFORMER**

TH9901	CEKP002-003	W.P. THERMISTOR		
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**OTHERS**

CN9003	CHB801N-04R-J	GTS CONNECTOR		
CN9004	CHB801N-04R-J	GTS CONNECTOR		
CN9014	CH42145-804T	VH POST HEADER		
CN90E6	CH42145-802S	VH POST HEADER		
F9901	QMF51D2-3R15J1	FUSE	3.15 A	
J9901	QMCB006-C01	AC INLET		
LF9901	CELF001-001J1	LINE FILTER		
LF9902	CELF010-001J6	LINE FILTER		

**RESET MODULE P.W. BOARD ASS'Y (FX-M010A)****RESISTOR**

R0551-52	QRE141J-102Y	C R	1kΩ	1/4W J
R0553-54	QRE141J-104Y	C R	100kΩ	1/4W J
R0555	QRE141J-103Y	C R	10kΩ	1/4W J

**CAPACITOR**

C0551	QETN1HM-474Z	E CAP.	0.47μF	50V M
C0552	QETN1HM-226Z	E CAP.	22μF	50V M
C0553	QETN1CM-476Z	E CAP.	47μF	16V M

**TRANSISTOR**

Q0551	2SA965/OY/	SI TRANSISTOR		
Q0552	2SC3311A/QR/-T	SI TRANSISTOR		

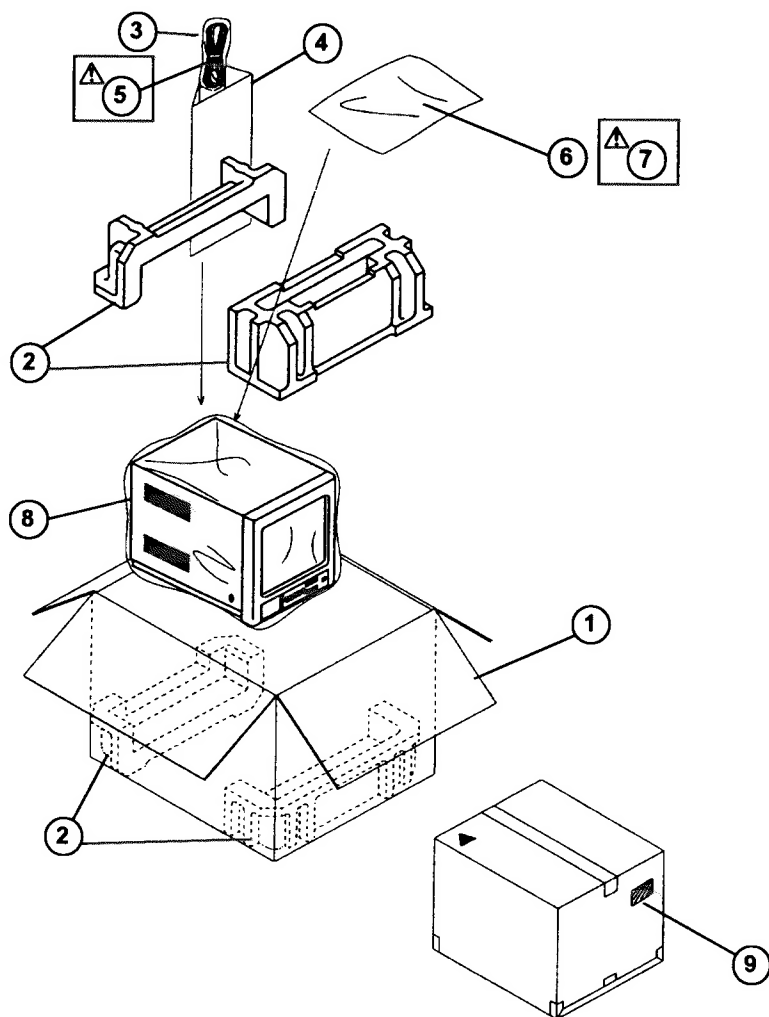
**IC**

IC0551	TC4538BP	I.C. (DIGI-MOS)		
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**OTHERS**

CN0006	CH42151-010PSP	JL PLUG		
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# PACKING



## PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
1	CP11224-A64	PACKING CASE	4pcs in 1set	
2	CP11658-00A	CUSHION ASSY		
3	QPGA012-03005	POLY BAG		
4	LC40092-001A	P.CORD CASE		
△ 5	QMPP010-200-JC	POWER CORD		
6	CP30975-001	POLY BAG		
△ 7	LCT0120-001A	INST.BOOK		
8	CP30974-004	POLY BAG		
9	CM47385-00A	POS/SERIAL LABEL		

# JVC

VICTOR COMPANY OF JAPAN, LIMITED  
TELEVISION RECEIVER DIVISION 1106 Heta, Iwai-city, Ibaraki-prefecture, 306-0698, Japan

